

DELIBERAZIONE DELLA GIUNTA REGIONALE 12 DICEMBRE 2022, N. 2183

**Approvazione schema di convenzione tra l'Agazia regionale per la sicurezza territoriale e la protezione civile e l'Università degli Studi di Parma - Dipartimento di Ingegneria e Architettura - DIA in materia di rischio sismico** 2

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## REGIONE EMILIA-ROMAGNA

DELIBERAZIONE DELLA GIUNTA REGIONALE 12 DICEMBRE 2022, N. 2183

**Approvazione schema di convenzione tra l'Agenzia regionale per la sicurezza territoriale e la protezione civile e l'Università degli Studi di Parma - Dipartimento di Ingegneria e Architettura - DIA in materia di rischio sismico**

LA GIUNTA DELLA REGIONE EMILIA-ROMAGNA

Richiamati:

- il decreto legislativo 2 gennaio 2018 n. 1 "Codice della protezione civile" così come modificato e integrato dal Decreto Legislativo 6 febbraio 2020, n. 4, in particolare per i seguenti articoli:

- 13, c. 2, ai sensi del quale concorrono alle attività di protezione civile, tra gli altri, le organizzazioni pubbliche che svolgono funzioni utili per le finalità di protezione civile;

- 16, c. 1, che individua tra le tipologie di rischi di protezione civile il rischio sismico;

- la D.G.R. n. 728 del 21 maggio 2018 recante "Prime disposizioni in attuazione del Decreto legislativo 2 gennaio 2018, n. 1 Codice della Protezione civile in materia di pianificazione dell'emergenza" con cui, nelle more dell'adozione dei provvedimenti attuativi previsti dal citato D.Lgs n.1/2018, sono state individuate le delibere di riferimento per l'attuazione della pianificazione dell'emergenza e per le azioni da adottare nelle emergenze";

- la legge regionale 7 febbraio 2005, n.1, recante "Norme in materia di protezione civile e volontariato. Istituzione dell'Agenzia regionale di protezione civile", e, in particolare, i seguenti articoli:

- 1, c. 2, che stabilisce che "all'espletamento delle attività di protezione civile provvedono la Regione, le Province, i Comuni, le Comunità Montane, le Unioni di Comuni e le altre forme associative di cui alla legge regionale 26 aprile 2001, n. 11 e vi concorre ogni altra istituzione ed organizzazione pubblica o privata [...]";

- 3, c. 1 lettere a), b), che elenca le attività del sistema regionale di protezione civile, tra le quali figurano quelle dirette "all'elaborazione del quadro conoscitivo e valutativo dei rischi presenti sul territorio regionale necessario per le attività di previsione e prevenzione con finalità di protezione civile" e "alla preparazione e pianificazione dell'emergenza, con l'indicazione delle procedure per la gestione coordinata degli interventi degli enti e delle strutture operative preposti, nonché delle risorse umane e strumentali necessarie";

- 11, c. 2, che stabilisce che nella redazione del Programma regionale di previsione e prevenzione dei rischi, l'attività di coordinamento tecnico è demandato all'Agenzia Regionale per la Sicurezza Territoriale e la Protezione Civile (d'ora in poi denominata Agenzia);

- 14, c. 2, che evidenzia che l'Agenzia, per lo svolgimento delle attività regionali di protezione civile si avvale, anche previa stipula di apposite convenzioni, della collaborazione, del supporto e della consulenza tecnica, oltre che delle strutture operative ivi espressamente elencate, anche di ogni altro soggetto pubblico che svolga compiti di interesse della protezione civile;

- 15, c. 1, che stabilisce che "l'Agenzia regionale può stipulare convenzioni con i soggetti di cui all'art. 14 commi 1 e 2, nonché con aziende pubbliche e private anche al fine di assicurare

la pronta disponibilità di particolari servizi, mezzi, attrezzature, strutture e personale specializzato da impiegare in situazioni di crisi ed emergenza";

- 20, c. 2, lettera b) che dando atto che l'Agenzia ha personalità giuridica di diritto pubblico, è dotata di autonomia tecnico operativa, amministrativa e contabile e provvede inoltre alla "pre-disposizione a livello tecnico, in concorso con le strutture tecniche regionali competenti, del programma regionale di previsione e prevenzione dei rischi di cui all'art. 11, in armonia con gli indirizzi nazionali";

- 20, c. 3, che prevede che per la redazione, tra l'altro, del programma di previsione e prevenzione dei rischi l'Agenzia acquisisce collaborazioni scientifiche ove non disponibili all'interno della Regione e può avvalersi della consulenza tecnico-scientifica anche di istituti universitari;

- 23, punto 6, che dà atto che presso l'Agenzia è costituito, quale presidio permanente, il Centro Operativo Regionale per la protezione civile (COR);

- la legge regionale 30 luglio 2015, n. 13 "Riforma del sistema di governo regionale e locale e disposizioni su città metropolitana di Bologna, province, comuni e loro unioni" e ss.mm.ii., con la quale è stato riformato il sistema di governo territoriale e, per quanto qui rileva, è stato ridefinito l'assetto delle competenze dell'Agenzia regionale di protezione civile rinominata, peraltro, Agenzia regionale per la sicurezza territoriale e la protezione civile;

- la D.G.R. n. 1769 dell'11 dicembre 2006 con la quale la Giunta Regionale ha approvato il Regolamento di organizzazione e contabilità dell'Agenzia, così come modificato dalle deliberazioni n. 839/2013 e n. 1023/2015;

- la D.G.R. n. 652/2007, "Indirizzi operativi in ordine alla stipulazione e all'attuazione delle convenzioni previste dalla L.R. n. 1/2005", la quale prevede che alla sottoscrizione delle convenzioni in applicazione degli articoli 14 e 15 della L.R. n. 1/2005 provvederà il Direttore dell'Agenzia in conformità ad uno schema previamente approvato con deliberazione della Giunta regionale;

Visto l'art. 15 della legge 7 agosto 1990, n. 241 "Nuove norme in materia di procedimento amministrativo e di diritto di accesso ai documenti amministrativi" e ss.mm.ii., che dispone la possibilità per le Amministrazioni pubbliche di concludere accordi per disciplinare lo svolgimento in collaborazione di attività di interesse comune.

Viste:

- la Direttiva del Presidente del Consiglio dei Ministri 14 gennaio 2014 "Programma nazionale di soccorso per il rischio sismico", pubblicata sulla G.U. n.79 del 4 aprile 2014;

- la D.G.R. n. 1669 del 14/10/2019 Approvazione del documento "allegato 2 organizzazione di Protezione Civile e elementi conoscitivi del territorio" della Regione Emilia-Romagna, che costituisce la componente regionale del piano nazionale rischio sismico;

Considerato che:

- la Regione Emilia-Romagna risulta esposta al rischio sismico;

- al fine di salvaguardare la sicurezza dei cittadini e di perseguire gli obiettivi posti dalle richiamate disposizioni statali e regionali, ha ritenuto necessario attivare specifici interventi ed attività finalizzati sia al miglioramento delle capacità di previsione del rischio sismico, sia alla predisposizione di misure organizza-

tive idonee ad assicurare il più efficace ed efficiente concorso alla pianificazione, preparazione e gestione delle situazioni di crisi connesse alle tipologie di rischio di cui trattasi, coinvolgendo in ambedue i suddetti ambiti operativi le strutture tecniche e scientifiche maggiormente qualificate presenti sul territorio regionale;

– per il perseguimento degli obiettivi sopracitati, l’Agenzia intende individuare un soggetto di elevata qualificazione e di profilo istituzionale, con cui condividere dette attività, non risultando tali figure professionali presenti all’interno dell’ente, stante soprattutto la specificità delle tematiche da trattare;

– le Università, quali Istituzioni di alta cultura deputate alla formazione superiore, al progresso delle scienze ed alla ricerca ed operanti in virtù degli indirizzi del Ministero dell’Istruzione, dell’Università e della Ricerca, sono organismo di diritto pubblico legittimato alla sottoscrizione di accordi ai sensi dell’art. 15, l. 241/1990;

– le Università, ai sensi dell’art. 6, comma 4, lettera b) della legge 9 maggio 1989 n.168, possono partecipare a programmi di ricerca promossi da Amministrazioni dello Stato, da Enti pubblici o privati o da istituzioni internazionali, nel rispetto delle relative normative;

– la collaborazione con le Università, mediante le proprie strumentazioni, tecnologie e competenze tecnico-scientifiche rappresenta da tempo un valido supporto per la Regione nello svolgimento delle attività di protezione civile;

– è intenzione dell’Agenzia e dell’Università svolgere un’attività in cooperazione finalizzata a garantire l’adempimento di una funzione di servizio pubblico comune, ossia quella di promuovere, organizzare e coordinare le attività di ricerca nel settore della previsione, prevenzione e gestione delle emergenze relative al rischio sismico;

– la presenza di una funzione di servizio pubblico comune e la mancanza dell’elemento sinallagmatico, consentono di inquadrare il presente atto nell’ambito degli accordi di collaborazione previsti dall’art. 15 della L. 241/1990 ss.mm.ii;

– gli importi versati a seguito del presente accordo non costituiscono corrispettivo per prestazioni di servizi o cessioni di beni, ma rimborso per le spese di ricerca;

Dato atto che l’Università degli studi di Parma negli anni ha affrontato, attraverso attività di studio e ricerca scientifica, il tema del rischio sismico nel territorio regionale, realizzando anche modelli operativi per affrontare situazioni di emergenza;

Ritenuto:

– opportuno che la Regione possa avvalersi delle competenze tecnico-scientifiche di cui dispone l’Università degli studi di Parma – Dipartimento di ingegneria e architettura - DIA per quanto riguarda il rischio sismico ai fini di protezione civile;

– di autorizzare l’Agenzia, nella persona del Direttore, a procedere alla stipula di una convenzione con l’Università degli studi di Parma – Dipartimento di ingegneria e architettura - DIA nell’ambito dei provvedimenti sopra richiamati, secondo lo schema contenuto nell’Allegato “A” alla presente deliberazione che ne costituisce parte integrante;

Preso atto che:

– il dettaglio e gli ambiti di attività oggetto della convenzione sono definiti nel Programma pluriennale delle attività, come da prospetto riportato nell’allegato “B” parte integrante e sostanziale del presente atto;

– con la sottoscrizione della convenzione viene istituito un

comitato tecnico a carattere temporaneo - che svolge attività di coordinamento e controllo dei risultati conseguiti in attuazione della convenzione - per la cui attività non vengono riconosciuti compensi;

– per gli oneri derivanti dalla sottoscrizione della convenzione in parola, che si quantificano nell’importo complessivo massimo di € 90.000,00, si ricorrerà alle risorse finanziarie disponibili sul bilancio dell’Agenzia;

Ritenuto di individuare all’interno della convenzione di cui all’allegato “A” idonee forme di verifica e controllo dei risultati conseguiti in attuazione di ciascuna annualità della convenzione;

Visti:

- il D.Lgs. n. 118 del 23 giugno 2011 “Disposizioni in materia di armonizzazione dei sistemi contabili e degli schemi di bilancio delle Regioni, degli Enti Locali e dei loro organismi, a norma degli artt. 1) e 2) della Legge 5 maggio 2009, n. 42” e ss.mm.ii.;

- la determinazione del Direttore dell’Agenzia n. 4359 del 25 novembre 2021 “Adozione relazione gestionale 2021 sulle attività svolte e piano delle attività per il triennio 2022-2024 dell’Agenzia regionale per la sicurezza territoriale e la protezione civile”;

- la determinazione del Direttore dell’Agenzia n. 4370 del 26 novembre 2021 “Adozione bilancio di previsione 2022-2024 dell’Agenzia regionale per la sicurezza territoriale e la protezione civile”;

- la D.G.R. n. 2152 del 20 dicembre 2021 di “Approvazione del bilancio di previsione e del piano delle attività dell’Agenzia regionale per la sicurezza territoriale e la protezione civile per gli anni 2022-2024”;

- la determinazione del Direttore dell’Agenzia n. 4690 del 23 dicembre 2021 di “Approvazione del documento tecnico di accompagnamento e del bilancio finanziario gestionale di previsione dell’Agenzia Regionale per la Sicurezza Territoriale e la Protezione Civile per gli anni 2022-2024”, come rettificata dalla D.D. n. 4727 del 30 dicembre 2021;

- la determinazione del Direttore dell’Agenzia n. 344 del 3 febbraio 2022 “Variazione del bilancio di previsione 2022-2024 dell’Agenzia regionale per la Sicurezza Territoriale e la Protezione Civile per utilizzo quote vincolate del risultato di amministrazione presunto dell’esercizio 2021”;

- la determinazione del Direttore dell’Agenzia n. 650 del 25 febbraio 2022 “Seconda variazione del bilancio di previsione 2022-2024 dell’Agenzia Regionale per la Sicurezza Territoriale e la Protezione Civile”;

- la determinazione del Direttore dell’Agenzia n. 900 del 17 marzo 2022 “RIACCERTAMENTO ORDINARIO DEI RESIDUI ATTIVI E PASSIVI AL 31.12.2021 DELL’AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE AI SENSI DELL’ART. 3, COMMA 4, DEL D.LGS. 118/2011 E SS.MM.II. - VARIAZIONI DI BILANCIO CONSEGUENTI AL RIACCERTAMENTO DEI RESIDUI E REIMPUTAZIONE SPESE”;

- la determinazione del Direttore dell’Agenzia n. 3344 del 23 settembre 2022: “Ottava Variazione del Bilancio di Previsione 2022-2024 dell’Agenzia Regionale per la Sicurezza Territoriale e la Protezione Civile mediante parziale utilizzo dell’avanzo di amministrazione 2021”;

Vista la L.R. 26 novembre 2001, n. 43, “Testo unico in materia di organizzazione e di rapporti di lavori nella Regione Emilia-Romagna;

Richiamate:

– la D.G.R. n. 2416 del 29 dicembre 2008 “Indirizzi in ordine alle relazioni organizzative e funzionali tra le strutture e sull’esercizio delle funzioni dirigenziali” e s.m.i;

– la D.G.R. n. 468 del 10 aprile 2017 “Il sistema dei controlli interni nella Regione Emilia-Romagna”, unitamente alle relative circolari del Capo di Gabinetto del Presidente della Giunta regionale PG/2017/660476 del 13.10.2017 e PG/2017/779385 del 21/12/2017, concernenti indicazioni procedurali per rendere operativo il sistema dei controlli interni;

– la determinazione dirigenziale n. 700 del 28 febbraio 2018 dell’Agenzia regionale per la Sicurezza territoriale e la Protezione civile “Recepimento della deliberazione di Giunta regionale n. 468/2017 recante “Il sistema dei controlli interni nella Regione Emilia-Romagna”;

– la determinazione dirigenziale 2657 del 1 settembre 2020 dell’Agenzia regionale per la sicurezza territoriale e la Protezione civile “Adozione sistema controlli interni all’Agenzia in attuazione della DGR 468/2017 e della D.D. 700/2018”;

– la D.G.R. n. 2018/2020 avente ad oggetto “Affidamento degli incarichi di direttore Generale della Giunta regionale ai sensi dell’art. 43 della 43/2001 e ss.mm.ii;

– la D.G.R. n. 2013 del 28 dicembre 2020 “Indirizzi organizzativi per il consolidamento e il potenziamento delle capacità amministrative dell’ente per il conseguimento degli obiettivi del programma di mandato, per fare fronte alla programmazione comunitaria 2021/2027 e primo adeguamento delle strutture regionali conseguenti alla soppressione dell’IBACN”;

– la D.G.R. n. 324 del 7 marzo 2022: “Disciplina organica in materia di organizzazione dell’Ente e gestione del personale”;

– la D.G.R. n. 325 del 7 marzo 2022: “Consolidamento e rafforzamento delle capacità amministrative: riorganizzazione dell’Ente a seguito del nuovo modello di organizzazione e gestione del personale”;

– la D.G.R. 21 marzo 2022, n. 426 “Riorganizzazione dell’ente a seguito del nuovo modello di organizzazione e gestione del personale. Conferimento degli incarichi ai Direttori Generali e ai Direttori di Agenzia”;

– la determinazione del Direttore dell’Agenzia n. 1049 del 25/03/2022 “Riorganizzazione dell’Agenzia regionale per la sicurezza territoriale e la protezione civile a seguito del nuovo modello organizzativo e gestione del personale. Conferimento incarichi dirigenziali e proroga delle posizioni organizzative”;

– la D.G.R. n. 1615 del 28 settembre 2022 “Modifica e assetto degli assetti organizzativi di alcune direzioni generali/agenzie della giunta regionale”;

Visti infine:

– il D.lgs. n. 33 del 14 marzo 2013 “Riordino della discipli-

na riguardante gli obblighi di pubblicità, trasparenza e diffusione di informazioni da parte delle pubbliche amministrazioni” come modificato dal D.Lgs. n. 97/2016;

– la D.G.R. n. 111 del 31 gennaio 2022: “Piano triennale di prevenzione della corruzione e trasparenza 2022-2024, di transizione al piano integrato di attività e organizzazione di cui all’art. 6 del d.l. n. 80/2021;

– la determinazione dirigenziale n. 2335 del 9/2/2022 che ha approvato la “Direttiva di indirizzi interpretativi degli obblighi di pubblicazione previsti dal decreto legislativo n.33 del 2013. Anno 2022”;

Dato atto che il Responsabile del procedimento ha dichiarato di non trovarsi in situazione di conflitto, anche potenziale, di interessi;

Dato atto dei pareri allegati;

Su proposta della Vicepresidente Assessore alla transizione ecologica, contrasto al cambiamento climatico, ambiente, difesa del suolo e della costa, protezione civile

A voti unanimi e palesi

delibera

a) di approvare lo schema di convenzione e il programma pluriennale delle attività con l’Università degli studi di Parma – Dipartimento di ingegneria e architettura - DIA per le attività di protezione civile in materia di prevenzione, pianificazione e gestione delle emergenze relative al rischio sismico, di cui agli allegati “A” e “B”, che sono parti integranti e sostanziali del presente atto;

b) di autorizzare il Direttore dell’Agenzia Regionale per la Sicurezza Territoriale e la Protezione Civile alla sottoscrizione della convenzione di cui all’allegato “A” che avrà decorrenza dalla data di effettiva sottoscrizione fino al 31 dicembre 2025;

c) di dare atto che:

- gli oneri derivanti dalla sottoscrizione della suddetta convenzione si quantificano nell’importo complessivo massimo di € 90.000,00;

- tale spesa troverà copertura nel bilancio di previsione 2023-2025 in corso di approvazione;

- contestualmente alla sottoscrizione della convenzione, il Direttore istituisce un comitato tecnico a carattere temporaneo - che svolge attività di coordinamento e controllo dei risultati conseguiti in attuazione della convenzione - per la cui attività non vengono riconosciuti compensi; all’eventuale variazione dei componenti del comitato provvede il Direttore dell’Agenzia;

d) di dare atto, infine, che il presente provvedimento è soggetto agli obblighi di pubblicazione secondo quanto previsto dal D.Lgs. 14 marzo 2013, n. 33 e ss.mm.ii.;

e) di pubblicare la presente deliberazione nel Bollettino Ufficiale della Regione Emilia-Romagna.

	ALLEGATO A	
	SCHEMA DI CONVENZIONE DI RICERCA TRA L'AGENZIA	
	REGIONALE PER LA SICUREZZA TERRITORIALE E LA	
	PROTEZIONE CIVILE E L'UNIVERSITA' DEGLI STUDI DI PARMA –	
	DIPARTIMENTO DI INGEGNERIA E ARCHITETTURA - DIA PER IL	
	SUPPORTO SPECIALISTICO NELLE ATTIVITÀ TECNICO-	
	SCIENTIFICHE FINALIZZATE ALLA PREVENZIONE, ALLA	
	PIANIFICAZIONE E ALLA GESTIONE DELLE EMERGENZE	
	RELATIVE AL RISCHIO SISMICO	
	TRA	
	l'Agenzia Regionale per la sicurezza territoriale e la Protezione Civile (in	
	seguito indicata come Agenzia), con sede in Viale Silvani 6 Bologna, C.F.	
	91278030373, rappresentata dal Direttore dott.ssa Rita Nicolini, autorizzata a	
	sottoscrivere il presente atto con Deliberazione di Giunta n. ____ del ____	
	E	
	l'Università degli Studi di Parma (in seguito indicata come Università), con	
	sede legale in Parma, Via Università n. 12, P.IVA e C.F. 00308780345,	
	rappresentata dal Rettore Prof. Paolo Andrei o suo Delegato	
	(in seguito, indicate singolarmente come Parte o congiuntamente come Parti)	
	PREMESSO CHE	
	– l'Agenzia Regionale per la sicurezza territoriale e la Protezione Civile	
	costituisce agenzia operativa ai sensi dell'articolo 43, comma 1, della L.R.	
	6/2004 e provvede alla gestione finanziaria, tecnica e amministrativa di tutte	
	le attività regionali di protezione civile a essa demandate dalla L.R. 1/2005;	
	- l'Università di Parma negli anni ha affrontato, attraverso attività di studio e	
	1	

	ricerca scientifica, il tema del rischio sismico nel territorio regionale,	
	realizzando anche modelli operativi per affrontare situazioni di emergenza;	
	- l’Agenzia e l’Università hanno espresso la volontà di realizzare attività di	
	studio, ricerca e supporto specialistico nelle attività tecnico-scientifiche in	
	materia di prevenzione, pianificazione e gestione delle emergenze relative al	
	rischio sismico;	
	– le Parti rientrano tra i soggetti di cui all’art. 15 della legge n. 241/1990, in	
	base al quale “le amministrazioni pubbliche possono sempre concludere tra	
	loro accordi per disciplinare lo svolgimento in collaborazione di attività di	
	interesse comune”.	
	SI CONVIENE E SI STIPULA	
	LA PRESENTE CONVENZIONE	
	Art.1	
	(Finalità ed oggetto)	
	1. La presente convenzione prevede la realizzazione di studi e ricerche	
	nell’ambito delle rispettive finalità istituzionali, nel settore della protezione	
	civile e della sicurezza territoriale, per la prevenzione, pianificazione e	
	gestione delle emergenze relative al rischio sismico.	
	2. L’Agenzia ritiene opportuno stipulare la presente convenzione con	
	l’Università al fine di proseguire la proficua collaborazione, tramite attività	
	pluriennali organizzate secondo una programmazione predefinita e	
	concordata. Nello specifico si manifesta la necessità di procedere sviluppando	
	i seguenti temi:	
	- identificazione dinamica di edifici strategici e calibrazione del	
	comportamento strutturale sulla base di sistemi di monitoraggio;	
	2	

	- mappatura del rischio sismico delle infrastrutture della rete viaria per	
	la gestione dell'emergenza sismica;	
	- sopralluoghi in caso di emergenza e supporto per le valutazioni degli	
	effetti del terremoto durante l'emergenza; Supporto al C.O.R. per la gestione	
	tecnica dell'emergenza sismica;	
	- formazione al personale del Centro Operativo Regionale di Protezione	
	Civile, ai tecnici dell'Agenzia esperti nell'ambito della progettazione in zona	
	sismica e ai tecnici del Nucleo di valutazione regionale.	
	Art. 2	
	(Programma Pluriennale delle Attività)	
	1. I temi di cui al punto precedente saranno sviluppati secondo un	
	Programma Pluriennale delle Attività, che costituisce parte integrante della	
	presente convenzione - allegato "B" alla richiamata delibera della Giunta	
	Regionale n. ____ del ____;	
	2. Le attività di cui al punto precedente saranno attuate dall'Agenzia e	
	dall'Università nel rispetto delle procedure interne previste dalle singole parti.	
	Art. 3	
	(Responsabili e Comitato Tecnico a carattere temporaneo)	
	1. Il Responsabile per l'attuazione della presente convenzione è	
	_____.	
	2. I Responsabili tecnici scientifici sono _____.	
	3. Per la gestione delle attività di cui alla presente convenzione viene	
	costituito un Comitato Tecnico a carattere temporaneo così composto:	
	a. per l'Agenzia regionale per la sicurezza territoriale e la protezione	
	civile_____;	
	3	

	b. per la Direzione Generale cura del territorio e dell'ambiente, ____;	
	c. per l'Università degli studi di Parma – Dipartimento di ingegneria e architettura, ____;	
	4. All'eventuale variazione dei componenti provvede il Direttore dell'Agenzia. Alla variazione dei componenti di cui alla lettera c), il Direttore provvede previa proposta dell'Università.	
	5. Ai componenti del Comitato non sono riconosciuti compensi.	
	6. I compiti del Comitato tecnico consistono:	
	– nella pianificazione delle attività da svolgersi, che non necessariamente devono contemplare tutte le tipologie elencate nell'allegato B;	
	– nella formulazione di proposte, modifiche e miglioramenti in merito alle procedure ed alle modalità attuative del programma pluriennale delle attività, nonché in merito agli aspetti organizzativi, gestionali e finanziari;	
	– nella redazione dei documenti di valutazione congiunta, attestanti le attività svolte ed i risultati conseguiti.	
	7. In relazione ad eventuali necessità che dovessero insorgere nella conduzione delle attività previste, il comitato potrà invitare alle proprie riunioni altri soggetti interessati.	
	8. La funzione di coordinatore del Comitato Tecnico è affidata a _____.	
	Art. 4	
	(Modalità di attuazione e responsabilità delle Parti)	
	1. L'Università realizzerà le attività programmate all'interno del	
	4	



	Programma pluriennale delle attività sulla base di linee concordate con	
	l'Agenzia.	
	2. L'Università si impegna a svolgere le attività programmate con	
	continuità per l'intero periodo concordato, rispettando i termini previsti, e a	
	dare immediata comunicazione all'Agenzia delle interruzioni e delle	
	modifiche operative che, per giustificato motivo, dovessero intervenire nello	
	svolgimento delle attività.	
	3. Al responsabile tecnico-scientifico spetterà il compito di organizzare,	
	in accordo con il Rettore, l'impiego delle risorse umane e materiali che	
	risulteranno necessarie per lo svolgimento delle attività previste.	
	4. L'Agenzia rende disponibili risorse umane, dati, relazioni, documenti	
	e rilievi già nella sua disponibilità ed eventuale strumentazione necessaria	
	all'espletamento delle attività previste nella presente convenzione.	
	5. Le attività istruttorie tecnico-amministrative sono in capo al personale	
	dell'Agenzia.	
	Art. 5	
	(Riparto dei costi e rapporti finanziari tra le Parti)	
	1. L'Agenzia si impegna ad erogare un contributo a rimborso delle spese	
	sostenute dall'Università degli studi di Parma – Dipartimento di ingegneria e	
	architettura, per l'attuazione delle attività da svolgere in collaborazione, per	
	un importo massimo di € 90.000,00.	
	2. Detto contributo verrà liquidato come segue:	
	a. € 30.000,00 dopo l'approvazione da parte del Comitato Tecnico delle	
	attività svolte nel 2023;	
	b. € 30.000,00 dopo l'approvazione da parte del Comitato Tecnico delle	
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	attività svolte nel 2024;	
	c. saldo pari a € 30.000,00 dopo l'approvazione da parte del Comitato	
	Tecnico delle attività svolte nel 2025, previa presentazione di relazione	
	conclusiva.	
	3. L'erogazione da parte dell'Agenzia delle tranches – relative alle	
	attività espletate nelle annualità di riferimento – avverrà a valle della	
	redazione dei documenti di valutazione congiunta (attestanti le attività svolte	
	ed i risultati conseguiti) e a fronte della presentazione della rendicontazione	
	documentata dei costi sostenuti, da presentare entro e non oltre il 31 gennaio	
	dell'anno successivo a quello di riferimento.	
	4. L'oggetto del rimborso spese è strettamente connesso all'attività di	
	interesse comune delle parti svolta dall'Università. Le somme erogate	
	saranno utilizzate dall'Università integralmente per le attività della presente	
	convenzione.	
	5. Le voci di costo comprendono l'impegno di personale strutturato e	
	non, spese di missione e di materiale di consumo e spese generali di volta in	
	volta necessarie per lo svolgimento delle attività. È ammessa l'attivazione di	
	borse di studio ed assegni di ricerca. Il numero e la durata dei contratti	
	possono essere modificati, ai fini della migliore organizzazione interna del	
	gruppo di lavoro, previa valutazione ed approvazione del Comitato Tecnico.	
	6. Dal complessivo assetto degli interessi stabilito fra le parti della	
	presente convenzione, non emerge – perché non sussiste fra le stesse –	
	un'operazione di scambio beni-servizi dietro corrispettivo, bensì un rimborso	
	spese per l'attività di interesse comune svolta dall'Università che in quanto	
	tale è da ritenersi fuori campo applicazione IVA, ai sensi degli art. n.1 e n.4	
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	del DPR n.633/72 e s.m.i..	
	Art. 6	
	(Utilizzazione dei dati e proprietà degli elaborati)	
	1. Le Parti hanno il diritto di utilizzare per i propri fini istituzionali i	
	risultati delle ricerche oggetto della presente convenzione.	
	2. Nel caso di pubblicazione anche parziale, ciascuna Parte si impegna	
	ad informare l'altra, a menzionarla, nonché a fornirle preventivamente copia	
	della pubblicazione al fine di verificare l'insussistenza di elementi	
	pregiudizievoli alla propria attività.	
	3. La proprietà dei materiali e degli elaborati derivati dalle attività di	
	ricerca è congiunta fra le Parti che potranno utilizzarli per i propri fini	
	istituzionali nel rispetto delle norme sulla proprietà intellettuale. Il	
	Dipartimento si impegna a consegnare all'Agenzia per ciascun prodotto	
	sviluppato il file sorgente in formato editabile	
	4. Nel caso di deposito brevetti derivanti dalle attività realizzate	
	congiuntamente, le parti si obbligano sin d'ora a perfezionare un accordo	
	integrativo attraverso il quale far emergere tale circostanza e convenire anche	
	le percentuali di contitolarità dei risultati, sempre tenendo conto dei contributi	
	inventivi e degli apporti di ciascuna parte.	
	Art. 7	
	(Accesso a dati per lo svolgimento delle attività e obbligo di riservatezza)	
	1. L'Agenzia, nell'ambito di quanto previsto dalla presente convenzione,	
	potrà mettere a disposizione del Dipartimento informazioni e dati tramite il	
	proprio sistema informativo, nel rispetto delle politiche di sicurezza della	
	Regione Emilia-Romagna.	
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	2. L'Università si impegna a utilizzare i dati e le informazioni	
	esclusivamente per quanto previsto in convenzione, a conservarle con la	
	massima cura e riservatezza, a non renderle note a terzi senza preventiva	
	autorizzazione da parte dell'Agenzia.	
	Art.8	
	(Protezione dei dati personali)	
	1. Il trattamento dei dati personali, forniti dai soggetti interessati in	
	relazione alle attività previste dalla presente convenzione, avviene nel rispetto	
	delle disposizioni del Regolamento UE 679/2016 - General Data Protection	
	Regulation, sul trattamento dei dati personali (di seguito denominato GDPR).	
	2. Le parti, anche nella fase di attuazione della presente convenzione,	
	sono tenute a mettere in atto misure tecniche e organizzative adeguate a	
	garantire che il trattamento sia conforme al GDPR. Sono inoltre soggette a	
	tutti gli obblighi propri dei titolari del trattamento, in particolare quello del	
	rilascio agli interessati delle informazioni previste ai sensi degli artt. 13 e 14	
	del GDPR. Devono altresì garantire l'esercizio dei diritti da parte	
	dell'interessato, ai sensi degli articoli da 15 a 22 del GDPR.	
	3. Per l'esecuzione della presente Convenzione, qualora sia necessario	
	trattare i dati personali di titolarità dell'Agenzia regionale per la sicurezza	
	territoriale e la Protezione Civile quest'ultima, in qualità di Titolare del	
	trattamento, si impegna a nominare, in base ad apposito accordo che verrà	
	all'uopo successivamente sottoscritto, l'Università quale Responsabile dei	
	dati personali trattati in esecuzione dei compiti e delle funzioni stabiliti nella	
	Convenzione medesima.	
	4. Le parti convengono che il presente articolo non esaurisce gli obblighi	
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	loro incorrenti in materia di privacy e di impegnarsi, tramite i referenti della
	convenzione di cui al precedente articolo 3, di concerto con il/la responsabile
	della struttura che effettua la raccolta dei dati, nel momento in cui verranno
	messe in atto le singole attività concretamente discendenti dalla presente
	convenzione, e qualora le stesse prevedano il trattamento di dati personali, ad
	ottemperare a quanto previsto dal GDPR, in materia di diritti delle persone
	interessate e delle informazioni da fornire loro.
	Art. 9
	(Durata, decorrenza e modalità di risoluzione della convenzione)
	1. La presente convenzione ha validità dalla data della sua sottoscrizione - cui
	si provvede con firma digitale – fino al 31/12/2025.
	2. Qualora ineludibili esigenze di ultimazione delle attività oggetto di
	collaborazione lo richiedano, il presente accordo potrà essere prorogato, senza
	maggiori oneri, per una durata corrispondente al tempo necessario per far
	fronte alle predette esigenze e, comunque, per un termine non superiore a un
	anno.
	Le parti convengono di far constare da specifico atto scritto, sia le esigenze
	che determinano la necessità della proroga, sia il termine temporale di durata
	della proroga in questione;
	Tale proroga non potrà comportare maggiori oneri;
	3. A prescindere dalla suddetta eccezionale ipotesi di proroga della
	durata, la vigenza del presente accordo di collaborazione cesserà alla
	scadenza del termine di cui al comma 1 del presente articolo. Tutte le altre
	ipotesi di continuazione della collaborazione tra le medesime parti dovranno
	essere oggetto di un nuovo iter, anche autorizzativo, di collaborazione, e di
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	conseguenza di altro e specifico accordo;	
4.	Le Parti hanno la facoltà di recedere dal presente Accordo per comprovate cause, sopravvenute ed indipendenti dalla volontà delle parti e per sopravvenute modifiche normative od altre ragioni di pubblico interesse. Il recesso deve essere esercitato mediante comunicazione scritta da inviare alle altre Parti tramite PEC, con un preavviso non inferiore a 2 (due) mesi. Il recesso non ha effetto che per l'avvenire e non incide sulla parte di Accordo già eseguita.	
5.	La risoluzione è disciplinata dalle norme codicistiche di riferimento. In caso di inadempimento da parte dei soggetti sottoscrittori agli impegni di cui all'art. 3 e degli altri obblighi derivanti dal presente accordo, lo stesso potrà risolversi, a seguito di diffida ad adempiere da parte di uno dei due soggetti, da comunicarsi mediante pec.	
	Art. 10	
	(Copertura assicurativa)	
1.	L'Università garantisce la copertura assicurativa contro gli infortuni e per responsabilità civile verso i terzi dei propri collaboratori a vario titolo impegnati nelle attività oggetto della presente convenzione.	
2.	L'Agenzia garantisce analoga copertura assicurativa ai propri dipendenti o collaboratori a qualsiasi titolo impegnati nello svolgimento delle suddette attività, ai sensi della vigente normativa.	
3.	Ciascuna Parte si impegna a integrare le coperture assicurative con quelle ulteriori che si rendessero eventualmente necessarie in relazione alle particolari esigenze poste dalle specifiche attività che verranno di volta in volta realizzate.	
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	Art. 11	
	(Responsabilità, Salute e Sicurezza nei luoghi di lavoro)	
	1. Ciascuna parte è esonerata da ogni responsabilità derivante dai rapporti di lavoro che venissero instaurati dall'altra nell'ambito delle attività di cui alla presente Convenzione.	
	2. Al fine di garantire la tutela della salute e la sicurezza del personale coinvolto nell'attività specificamente svolta, rispettivamente presso strutture degli Enti ed esposto a rischi, vengono individuati i soggetti cui competono gli obblighi previsti dal D. Lgs. n. 81/2008. Al riguardo, le Parti concordano che quando il rispettivo personale si trova a svolgere attività di collaborazione presso la sede dell'altra, il datore di lavoro della sede ospitante, sulla base delle risultanze della valutazione dei rischi da lui realizzata assicura al sopra citato personale, esclusivamente per le attività svolte in spazi di sua competenza, le misure generali di tutela della salute e della sicurezza e le misure specifiche di protezione e prevenzione dai rischi, esclusa la sorveglianza sanitaria.	
	3. Il personale delle Parti firmatarie del presente accordo è tenuto alla osservanza delle disposizioni in materia di prevenzione, sicurezza e tutela della salute dei lavoratori stabilite con atti e regolamenti della sede ospitante.	
	Art. 12	
	(Rispetto delle norme in tema di prevenzione della corruzione)	
	1. Vista la normativa in materia di prevenzione della corruzione, pubblicità e trasparenza, di cui alla legge 6 novembre 2012, n. 190 (Disposizioni per la prevenzione e la repressione della corruzione e dell'illegalità nella pubblica amministrazione) e al decreto legislativo 14	
	11	

	marzo 2013, n. 33 (Riordino della disciplina riguardante il diritto di accesso
	civico e gli obblighi di pubblicità, trasparenza e diffusione di informazioni da
	parte delle pubbliche amministrazioni), come modificato dal decreto
	legislativo 25 maggio 2016, n. 97, (Revisione e semplificazione delle
	disposizioni in materia di prevenzione della corruzione, pubblicità e
	trasparenza), le parti si danno reciprocamente atto di impegnarsi,
	nell'attuazione della presente convenzione, al rispetto delle norme citate e
	delle eventuali successive modificazioni.
	2. Il personale di entrambe le parti coinvolto nell'esecuzione delle
	attività inerenti la presente Convenzione, è tenuto ad uniformarsi ai Codici di
	comportamento, ai regolamenti e alle disposizioni in vigore nelle sedi di
	esecuzione di dette attività. Le Parti si impegnano a vigilare, pena la
	risoluzione della convenzione, sul rispetto degli obblighi di comportamento
	previsti dai sopracitati codici e regolamenti.
	Art. 13
	(Controversie e foro competente)
	1. La presente convenzione è regolata dalla legge italiana e per ogni
	controversia, non componibile in via amichevole, che dovesse insorgere nella
	gestione, esecuzione, interpretazione o scioglimento, l'Agenzia e l'Università
	degli studi di Parma eleggono come foro esclusivo competente quello di
	Bologna.
	Art. 14
	(Registrazione)
	1. La registrazione della presente Convenzione è prevista, in caso di uso,
	a cura e a spese della Parte che ne ha interesse.
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2. La presente Convenzione è soggetta all'imposta di bollo ai sensi dell'art. 2 del D.P.R. 26 ottobre 1972, n. 642 e dell'art. 2 della Tariffa, parte I, a cura e a spese dell'Agenzia regionale per la sicurezza territoriale e la protezione civile.

Letto, approvato e sottoscritto.

l'Università degli studi di Parma

Il Rettore

Prof. Paolo Andrei

\_\_\_\_\_ (firmato digitalmente)

Agenzia regionale per la sicurezza territoriale e la Protezione Civile

Il Direttore

Dott.ssa Rita Nicolini

\_\_\_\_\_ (firmato digitalmente)

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## ALLEGATO B

PROGRAMMA PLURIENNALE DELLE ATTIVITÀ TECNICO-SCIENTIFICHE INERENTI LA PREVENZIONE, LA PIANIFICAZIONE E LA GESTIONE DELLE EMERGENZE RELATIVE AL RISCHIO SISMICO DA ESPLETARSI CON IL SUPPORTO SPECIALISTICO DEL DIPARTIMENTO DI INGEGNERIA E ARCHITETTURA DELL'UNIVERSITÀ DI PARMA IN ATTUAZIONE DELLA CONVENZIONE DI RICERCA CON L'AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE.

### ATTIVITÀ 1

#### Identificazione dinamica di edifici strategici e calibrazione del comportamento strutturale sulla base di sistemi di monitoraggio.

In tale ambito si intende sviluppare l'attività di valutazione del comportamento dinamico di edifici strategici al fine di interpretare le misure eseguite tramite monitoraggio. Le valutazioni numeriche verranno eseguite tramite analisi agli elementi finiti ed algoritmi numerici.

La gestione degli edifici pubblici di importanza strategica, la cui corretta funzionalità risulta di fondamentale rilievo per la collettività soprattutto nelle fasi di gestione dell'emergenza post-sisma, richiede un periodico "controllo" delle loro prestazioni. Tale controllo può essere effettuato mediante l'installazione di sistemi di monitoraggio permanenti eccitati dalle vibrazioni ambientali. Nell'ambito della rete di monitoraggio dell'Osservatorio Sismico Nazionale (OSS), gestito dal Dipartimento di protezione civile, sono attualmente monitorate circa 150 costruzioni di proprietà pubblica, in larga parte edifici (scuole, ospedali, municipi), ubicati in zone del Paese a sismicità medio-alta. Le informazioni raccolte dall'OSS sono di fondamentale importanza per la gestione delle attività di Protezione Civile nella fase dell'emergenza, perché se da un lato permettono di tenere costantemente sotto controllo lo stato di salute degli edifici strategici, dall'altro consentono di identificare in tempo quasi reale i possibili danni prodotti durante il terremoto. Tali danni possono essere inoltre "estesi" per analogia a strutture con caratteristiche simili ricadenti nella stessa area, così da identificare un iniziale scenario post-sisma, utile per pianificare gli interventi e per effettuare una prima valutazione delle perdite. In questo senso, gli studi relativi alla sismicità del territorio dell'Emilia-Romagna e alle tipologie edilizie maggiormente ricorrenti nelle aree selezionate come maggiormente a rischio, permetteranno di guidare in modo più mirato ed efficiente la scelta dei nuovi edifici da monitorare, e da inserire nell'ambito delle attività dell'OSS.

Inoltre, i dati del monitoraggio potranno essere utilizzati per la calibrazione di modelli numerici agli elementi finiti, cosiddetto "model updating", di supporto per l'interpretazione della risposta sismica dell'edificio selezionato. I modelli numerici potranno inoltre fornire un valido supporto nell'ottimizzazione del sistema di monitoraggio stesso, nell'ottica del cosiddetto "optimal sensor placement". Infatti, dal confronto tra le misure di vibrazione ambientale ottenute tramite sensori temporanei e la risposta ottenuta dal modello numerico possono scaturire utili informazioni circa il posizionamento "ottimale" dei sensori fissi, così da massimizzare le informazioni ottenibili relative al comportamento dinamico della struttura.

## ATTIVITÀ 2

### Mappatura del rischio sismico delle infrastrutture della rete viaria per la gestione dell'emergenza sismica.

In tale ambito, si intende studiare la relazione esistente tra l'evento sismico, le caratteristiche dell'infrastruttura, qualificata per categorie di elementi esposti, e il suo livello funzionale a seguito del sisma. Tale studio consentirà di definire scenari di emergenza in caso di sisma, stimando la robustezza del sistema viario del contesto urbano analizzato. L'obiettivo finale è l'estensione, nel tempo, del modello adottato all'intero sistema infrastrutturale regionale. I risultati verranno integrati nel sistema di strumenti operativi a disposizione del Centro Operativo Regionale.

Questo tema si colloca nell'ambito più generale dell'analisi di rischio dei sistemi di trasporto legati a vari tipi di rischi naturali. Per la valutazione delle misure di emergenza che devono attuarsi in occasione di un evento sismico è fondamentale stimare, mediante metodi speditivi di carattere probabilistico, l'efficienza, l'affidabilità e la disponibilità delle infrastrutture viarie, e in particolare di quelle coinvolte dalla Condizione Limite di Emergenza. Come i recenti eventi hanno mostrato, solo il mantenimento di un livello sufficiente di efficienza può consentire il raggiungimento in breve tempo delle zone colpite dal sisma e quindi mitigarne le conseguenze. Per tali ragioni, è di fondamentale importanza poter disporre di strumenti di analisi in grado di valutare preventivamente gli effetti locali e sistemici dei terremoti.

## ATTIVITÀ 3

### Sopralluoghi in caso di emergenza e supporto per le valutazioni degli effetti del terremoto durante l'emergenza Supporto al C.O.R. per la gestione tecnica dell'emergenza sismica.

Effettuazione di sopralluoghi in caso di eventi sismici finalizzati a valutazioni di rischio e comunque a supporto della individuazione di misure per i piani di interventi urgenti, di messa in sicurezza e di ricostruzione.

## ATTIVITÀ 4

### Formazione al personale del Centro Operativo Regionale di Protezione Civile, ai tecnici dell'Agenzia esperti nell'ambito della progettazione in zona sismica e ai tecnici del Nucleo di valutazione regionale.

Supporto per l'addestramento, degli operatori del Centro operativo regionale (C.O.R.) dell'Agenzia regionale per la sicurezza territoriale e la Protezione Civile, alle attività tecniche di valutazione degli scenari e delle criticità connesse agli eventi sismici. Formazione al personale esperto in progettazione in zona sismica dell'Agenzia per le attività ordinarie di progettazione. Formazione ai tecnici del Nucleo di valutazione regionale (NVR) per le attività connesse ai sopralluoghi di agibilità a seguito di eventi sismici.

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## REGIONE EMILIA-ROMAGNA

## DELIBERAZIONE DELLA GIUNTA REGIONALE 12 DICEMBRE 2022, N. 2184

**Preso atto dell'avvenuta presentazione e approvazione del progetto n. 101073978 Directed "Disaster resilience for extreme climate events providing interoperable data, models, communication and governance"**

## LA GIUNTA DELLA REGIONE EMILIA-ROMAGNA

Visti:

- il Regolamento (ue) 2021/695 del Parlamento europeo e del Consiglio del 28 aprile 2021, che istituisce il programma quadro di ricerca e innovazione *Horizon Europe* e ne stabilisce le norme di partecipazione e diffusione e abroga i regolamenti (UE) n. 1290/2013 e (UE) n. 1291/2013;

- Il Regolamento (UE, Euratom) 2018/1046 del Parlamento europeo e del Consiglio del 18 luglio 2018 che stabilisce le regole finanziarie applicabili al bilancio generale dell'Unione, che modifica i regolamenti (UE) n. 1296/2013, (UE) n. 1301/2013, (UE) n. 1303/2013, (UE) n. 1304/2013, (UE) n. 1309/2013, (UE) n. 1316/2013, (UE) n. 223/2014, (UE) n. 283/2014 e la decisione n. 541/2014/UE e abroga il regolamento (UE, Euratom) n. 966/2012;

- La Decisione (UE) 2021/764 del Consiglio del 10 maggio 2021 che istituisce il programma specifico di attuazione di *Horizon Europe* — il programma quadro di ricerca e innovazione, e che abroga la decisione (UE) 2013/743/UE;

Premesso che:

- il nuovo programma quadro di finanziamento Horizon Europe 2021-2027, finanzia attività di ricerca e innovazione (R&I) o attività di sostegno alla R&I, attraverso inviti a presentare proposte (call for proposals) aperti e competitivi;

- il programma è attuato direttamente dalla Commissione europea (gestione diretta) per il tramite del European Research Executive Agency (REA) e le attività di ricerca e innovazione finanziate devono concentrarsi esclusivamente su applicazioni civili;

- l'obiettivo generale di Horizon Europe è produrre un impatto scientifico, tecnologico, economico e sociale in modo da:

- rafforzare le basi scientifiche e tecnologiche dell'Unione e lo Spazio europeo della ricerca;

- promuovere la sua competitività in tutti gli Stati membri;

- attuare le priorità strategiche dell'Ue e concorrere alla realizzazione delle politiche europee, enunciate dagli obiettivi di sviluppo sostenibile dell'Agenda 2030 delle Nazioni Unite e dall'accordo di Parigi sul clima, sfruttando al massimo il valore aggiunto dell'Unione concentrandosi su obiettivi e attività che non possono essere realizzati in modo efficace dai singoli Stati membri;

- il programma è articolato in tre pilastri tematici e una parte trasversale;

- all'interno del secondo pilastro "Sfide globali e competitività industriale europea", che sostiene l'accesso e l'adozione di soluzioni innovative nell'industria e nella società europee per affrontare le sfide globali, tra tutte il cambiamento climatico e gli obiettivi di sviluppo sostenibile, è previsto il polo tematico (cluster) 3 "Sicurezza civile per la società" che ha l'ambizione di contribuire al raggiungimento di una condizione di sicurezza e stabilità dell'Unione. I finanziamenti sono caratterizzati da una

visione di lungo termine, basata sull'anticipazione e sulla preparazione, in grado di sostenere lo sviluppo di strategie e di capacità di prevenzione e rispondere prontamente a sfide sociali e tecnologiche in rapida evoluzione;

- il Cluster 3 "Sicurezza civile per la società" finanzia sei destination tra cui "A Disaster-Resilient Society for Europe" (Società resiliente ai disastri per l'Europa) che mira alla riduzione di perdite in termini di vite umane, danni ambientali e danni economici, dovuti a catastrofi naturali o causate dall'uomo, puntando su azioni di prevenzione, migliore preparazione e gestione sistemica del rischio;

Dato atto che:

- l'accesso alle opportunità finanziarie previste dal Programma Horizon Europe avviene attraverso la selezione di proposte di progetto presentate in concomitanza all'emanazione di bandi internazionali;

- la partecipazione a progetti può avvenire in forma di coordinator (coordinatore di progetto) o di participant (partecipante al progetto);

- nel corso del 2021 è stato avviato un bando per la selezione di progetti nell'ambito del Programma Horizon Europe - Horizon-CL3-2021-DRS-01 - Disaster-Resilient Society 2021 (Società resiliente ai disastri);

- l'Agenzia per la Sicurezza territoriale e la protezione civile (di seguito Agenzia) ha partecipato in qualità di *participant* al suddetto bando con la proposta di progetto n. 101073978 *DIRECTED "DISASTER RESILIENCE FOR EXTREME CLIMATE EVENTS PROVIDING INTEROPERABLE DATA, MODELS, COMMUNICATION AND GOVERNANCE"* (Resilienza alle catastrofi dovute a eventi climatici estremi attraverso dati interoperabili, modelli, comunicazioni e governance), presentato dal *coordinator* Technische Universitaet Braunschweig, DE;

- a seguito della procedura di selezione, in data 8/4/2022 la Commissione europea ha approvato la proposta di progetto "101073978 — DIRECTED";

- contestualmente all'approvazione della proposta di progetto la Commissione europea ha subordinato:

- la sottoscrizione del *Consortium Agreement* (Accordo interpartenariale) tra il *coordinator* e i *beneficiaries* - Allegato 1 "Consortium agreement", parte integrante e sostanziale della presente deliberazione;

- la stipula del *Grant Agreement* (Accordo di finanziamento) tra il *coordinator*, *otherbeneficiaries* e la Commissione Europea - Allegato 2 "Grant Agreement", parte integrante e sostanziale della presente deliberazione;

Rilevato che:

- il progetto DIRECTED avrà durata di 48 mesi, a partire dal 1/10/2022 e un budget totale di progetto di € 5.283.350,00 per un contributo massimo europeo pari a 5.054.599,99 (*vedasi Annex2 del Grant Agreement*);

- il partenariato del progetto è composto:

dal *coordinator*:

- TECHNISCHE UNIVERSITAET BRAUNSCHWEIG, DE; dai *beneficiaries*:

- POTSDAM-INSTITUT FUER KLIMAFOLGENFORSCHUNG, DE;

- DANMARKS TEKNISKE UNIVERSITET, DK;

- GECOSISTEMA SRL, IT;

- INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES EV, DE;
- UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, IE;
- REGION HOVEDSTADEN, DK;
- AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE, IT;
- GENILLARD & CO GMBH, DE;
- INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE, AT;
- ERFTVERBAND, DE;
- ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET, HU;
- AGENZIA REGIONALE PREVENZIONE AMBIENTE ENERGIA EMILIA-ROMAGNA, IT;
- HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEFORSCHUNGSZENTRUM, DE;
- NORTH SPATIAL INFORMATION RESEARCH GMBH - 52°North GmbH, DE,

dagli *associated partners*:

- SEI OXFORD OFFICE LIMITED, UK
  - OASIS HUB LIMITED, UK;
  - EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH Switzerland;
- l'ammontare dei fondi destinati da tale progetto all'Agencia è pari a € 97.750,00 a totale carico dell'UE;
- attraverso il progetto DIRECTED, l'Agencia aumenterà le proprie conoscenze e competenze rispetto alle nuove tematiche di Disaster Risk Reduction - DRR (Riduzione del rischio da catastrofi) e Climate Change Adaptation - CCA (Adattamento ai cambiamenti climatici) nell'ottica del multi-rischio, in particolare porrà l'attenzione ai modelli di allerta precoce e alla validazione di misure strutturali e non strutturali in funzione dei diversi scenari di rischio;

Dato atto che:

- i rapporti tra i beneficiari aderenti al progetto, nonché i diritti e gli obblighi facenti capo ad ognuno dei beneficiari sono specificatamente disciplinati dal "Consortium Agreement" (Allegato 1 parte integrante e sostanziale della presente deliberazione);
- con l'approvazione della proposta di progetto sono state definite sia le azioni progettuali che il relativo quadro finanziario, nonché le quote previste a favore di ciascun beneficiario;
- l'attuazione tecnica e amministrativo-finanziaria del succitato progetto DIRECTED risulta di competenza dell'Agencia che si avvarrà dei dipendenti della stessa Agencia in possesso delle competenze necessarie per il rispetto degli adempimenti previsti per la relativa attuazione;

Ritenuto:

- di recepire l'avvenuta presentazione, approvazione del progetto n. 101073978 — DIRECTED a cui l'Agencia partecipa in qualità di *beneficiary*;

Visti:

- la L.R. 26 novembre 2001, n. 43, "Testo unico in materia di organizzazione e di rapporti di lavoro nella Regione Emilia-Romagna" e ss.mm.ii.;
- il D.lgs. n. 33/2013 «Riordino della disciplina riguardante gli obblighi di pubblicità, trasparenza e diffusione di informazio-

ni da parte delle Pubbliche Amministrazioni» e ss.mm.ii.;

- la propria deliberazione n. 111 del 31 gennaio 2022 di approvazione del "Piano triennale di prevenzione della corruzione e trasparenza 2022-2024, di transizione al piano integrato di attività e organizzazione di cui all'art. 6 del D.lgs. n. 80/2021";
- la D.D. n. 2335 del 9/2/2022 che ha approvato la "Direttiva di indirizzi interpretativi degli obblighi di pubblicazione previsti dal decreto legislativo n.33 del 2013. Anno 2022";

Richiamate:

- la propria deliberazione n. 2416 del 29 dicembre 2008 "Indirizzi in ordine alle relazioni organizzative e funzionali tra le strutture e sull'esercizio delle funzioni dirigenziali" e ss.mm.ii., limitatamente alle disposizioni ancora vigenti;
  - la propria deliberazione n. 468 del 10/4/2017 "Il Sistema dei controlli interni della Regione Emilia-Romagna", unitamente alle relative circolari del Capo di Gabinetto del Presidente della Giunta regionale PG/2017/660476 del 13.10.2017 e PG/2017/779385 del 21/12/2017, concernenti indicazioni procedurali per rendere operativo il sistema dei controlli interni;
  - la D.D. n. 700 del 28 febbraio 2018 dell'Agencia regionale per la Sicurezza territoriale e la Protezione civile "Recepimento della deliberazione di Giunta regionale n. 468/2017 recante "Il sistema dei controlli interni nella Regione Emilia-Romagna";
  - la D.D. 2657 del 1 settembre 2020 dell'Agencia regionale per la sicurezza territoriale e la Protezione civile "Adozione sistema controlli interni all'Agencia in attuazione della DGR 468/2017 e della D.D. 700/2018";
  - la D.G.R. n. 2013 del 28 dicembre 2020 "Indirizzi organizzativi per il consolidamento e il potenziamento delle capacità amministrative dell'ente per il conseguimento degli obiettivi del programma di mandato, per fare fronte alla programmazione comunitaria 2021/2027 e primo adeguamento delle strutture regionali conseguenti alla soppressione dell'IBACN";
  - la D.G.R. n. 415 del 29 marzo 2021 "Indirizzi organizzativi per il consolidamento e il potenziamento delle capacità amministrative dell'ente per il conseguimento degli obiettivi del programma di mandato, per fare fronte alla programmazione comunitaria 2021/2027: proroga degli incarichi";
  - la D.G.R. n. 324 del 7 marzo 2022 "Disciplina organica in materia di organizzazione dell'Ente e gestione del personale";
  - la D.G.R. n. 325 del 7 marzo 2022 "Consolidamento e rafforzamento delle capacità amministrative: riorganizzazione dell'Ente a seguito del nuovo modello di organizzazione e gestione del personale";
  - la D.G.R. n. 426 del 21 marzo 2022 "Riorganizzazione dell'ente a seguito del nuovo modello di organizzazione e gestione del personale. Conferimento degli incarichi ai Direttori Generali e ai Direttori di Agencia";
  - la determinazione del Direttore n. 1049 del 25/3/2022 "Riorganizzazione dell'Agencia regionale per la sicurezza territoriale e la protezione civile a seguito del nuovo modello organizzativo e gestione del personale. Conferimento incarichi dirigenziali e proroga delle posizioni organizzative";
  - la D.G.R. n. 1615 del 28 settembre 2022 "Modifica e assetto degli assetti organizzativi di alcune direzioni generali/agenzie della giunta regionale";
- Dato atto che il responsabile del procedimento, nel sottoscrivere il parere di legittimità, attesta di non trovarsi in situazione di conflitto, anche potenziale, di interessi;

Dato atto dei pareri allegati;

Su proposta del Vicepresidente Assessore alla Transizione Ecologica, contrasto al cambiamento climatico, Ambiente, Difesa del suolo e della costa, protezione civile;

A voti unanimi e palesi

delibera

1) di prendere atto dell'avvenuta presentazione e approvazione del progetto n. 101073978 DIRECTED "*Disaster resilience for extreme climate events providing interoperable data, models, communication and governance*" dell'importo complessivo di € 5.283.350,00, ammesso a finanziamento ai sensi del Programma *Horizon Europe*, che vede la partecipazione dell'Agenzia regionale per la Sicurezza territoriale e la protezione civile in qualità

di *beneficiary* per la quota di € 97.750,00 a totale carico dell'UE (Annex 2 del Grant Agreement);

2) di stabilire, inoltre, che l'attuazione tecnica e amministrativo-finanziaria del succitato progetto DIRECTED è in capo all'Agenzia per la sicurezza territoriale e protezione civile che si avvarrà dei dipendenti della stessa Agenzia in possesso delle competenze necessarie per il rispetto degli adempimenti previsti per la relativa attuazione, così come definito dal "*Consortium Agreement*" e del "*Grant Agreement*";

3) di disporre le ulteriori pubblicazioni previste dal Piano triennale di prevenzione della corruzione ai sensi dell'art. 7 bis, comma 3, del D.lgs. n. 33/2013 e ss.mm.ii.;

4) di pubblicare la presente deliberazione nel Bollettino Ufficiale della Regione Emilia-Romagna.

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# Consortium Agreement



[DIRECTED]

Version [4.0] – [29.08-2022]

(Based on DESC A – Model Consortium Agreement for Horizon Europe, version 1, December 2021)

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## **CONSORTIUM AGREEMENT**

THIS CONSORTIUM AGREEMENT is based upon Regulation (EU) No 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation (2021-2027), laying down its rules for participation and dissemination (hereinafter referred to as “Horizon Europe Regulation”), and on the European Commission’s General Model Grant Agreement and its Annexes, and is made on 1<sup>st</sup> October 2022, hereinafter referred to as the Effective Date.

### **BETWEEN:**

**TECHNISCHE UNIVERSITAET BRAUNSCHWEIG**, TUBS, UNIVERSITAETSPLATZ 2, 38106 BRAUNSCHWEIG, GERMANY, the Coordinator

and

**POTSDAM-INSTITUT FUR KLIMAFOLGENFORSCHUNG e. V.**, PIK, TELEGRAFENBERG A31, 14473 POTSDAM, GERMANY

and

**DANMARKS TEKNISKE UNIVERSITET**, DTU, ANKER ENGELUNDSVEJ 1, BYGNING 101 A 2800, KGS LYNGBY, Denmark

and

**GECOSISTEMA SRL**, GECO, PIAZZA MALATESTA 21, 47900 RIMINI, Italy

and

**INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES, EV**, IASS, BERLINER STRASSE 130, 14467 POTSDAM, Germany

and

**UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK**, UCC a body incorporated under Charter with its place of address at. Western Road , CORK, Ireland

and

**REGION HOVEDSTADEN**, REGIONH, KONGENS VAENGE 2 3400, HILLEROD, Denmark

and

**AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE**, ARSTPC-ER, VIALE SILVANI 6, 40122 BOLOGNA, Italy

and

**GENILLARD & CO GMBH**, G&C, ISMANINGER STRASSE 102, 81675 MUENCHEN, Germany

and

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**INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE, IIASA,**  
SCHLOSSPLATZ 1, 2361 LAXENBURG, Austria

and

**ERFTVERBAND, EV, AM ERFTVERBAND 6, 50126 BERGHEIM, Germany**

and

**ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET, ZSRT, EPITOK UTJA 5**  
3//9, 8900 ZALAEGRSZEG, Hungary

and

**AGENZIA REGIONALE PER LA PREVENZIONE, L'AMBIENTE E L'ENERGIA DELL'EMILIA-  
ROMAGNA, ARPAE, VIA PO 5, 40139 BOLOGNA, Italy**

and

**HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM, GFZ**  
TELEGRAFENBERG, 14473 POTSDAM, Germany

and

**52° NORTH SPATIAL INFORMATION RESEARCH GMBH - 52°North GmbH, 52N, MARTIN-  
LUTHER-KING-WEG 24, 48155 MUENSTER, Germany**

**Hereinafter, jointly or individually, referred to as “Beneficiaries” or “Beneficiary”**

**And the Associated Partners**

**SEI OXFORD OFFICE LIMITED, SEI, with legal address, OXFORD ECO CENTRE, ROGER HOUSE,**  
OSNEY MEAD, OXFORD, OXFORDSHIRE, OX2 0ES (United Kingdom)

and

**OASIS HUB LIMITED, OASIS, 39, 60 BARGE WALK, GREENWICH SE10 0UG , (United Kingdom)**

and

**EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH, ETH Zurich, RAEMISTREASSE 101,**  
8092 ZUERICH, Switzerland (ETH Zürich)

hereinafter, jointly or individually, referred to as ” Associated Parties” or ”Associated Party”

hereinafter the Associated Parties and the Beneficiaries, jointly or individually, referred to as “Parties”  
or “Party”

relating to the Action entitled

**Disaster Resilience for Extreme Climate Events providing interoperable Data, models,  
communication and governance**

in short

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## **DIRECTED**

hereinafter referred to as "Project"

## **WHEREAS:**

The Parties, having considerable experience in the field concerned, have submitted a proposal for the Project to the Granting Authority as part of Horizon Europe – the Framework Programme for Research and Innovation (2021-2027).

The Parties wish to specify or supplement binding commitments among themselves in addition to the provisions of the specific Grant Agreement to be signed by the Parties and the Granting Authority (hereinafter "Grant Agreement").

The Associated Partners undertakes to comply with their duties according to the binding commitments agreed in this Consortium Agreement between among the Consortium Parties

The Parties are aware that this Consortium Agreement is based upon the [DESCA model consortium agreement](#).

NOW, THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:

## **1 Definitions**

### **1.1 Definitions**

Words beginning with a capital letter shall have the meaning defined either herein or in the Horizon Europe Regulation or in the Grant Agreement including its Annexes.

### **1.2 Additional Definitions**

"Associated Partners"

Associated Partners means the Parties listed in Article 9.1 of the Grant Agreement. They will implement the action tasks attributed to them in Annex 1 of the Grant Agreement but do not receive EU funding from the Granting Authority and cannot charge costs or contributions to the Action.

**"Consortium Body"**

Consortium Body means any management body described in Section 6 (Governance Structure) of this Consortium Agreement.

**"Consortium Plan"**

Consortium Plan means the description of the Action and the related agreed budget as first defined in the Grant Agreement and which may be updated by the General Assembly.

**"Granting Authority"**

Granting Authority means the body awarding the grant for the Project to the Beneficiaries.

**"Defaulting Party"**

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Defaulting Party means a Party which the General Assembly has identified to be in breach of this Consortium Agreement and/or the Grant Agreement as specified in Section 4.2 of this Consortium Agreement.

#### **“Needed”**

Needed means:

*For the implementation of the Project:*

Access Rights are Needed if, without the grant of such Access Rights, carrying out the tasks assigned to the recipient Party would be technically or legally impossible, significantly delayed, or require significant additional financial or human resources.

*For Exploitation of own Results:*

Access Rights are Needed if, without the grant of such Access Rights, the Exploitation of own Results would be technically or legally impossible.

#### **“Software”**

Software means sequences of instructions to carry out a process in, or convertible into, a form executable by a computer and fixed in any tangible medium of expression.

#### **“Open Source Software”**

Open Source Software means software that is allowed to be used and distributed as described by the definition given in <http://www.opensource.org>.

## **2 Purpose**

The purpose of this Consortium Agreement is to specify with respect to the Project the relationship among the Parties, in particular concerning the organisation of the work between the Parties, the management of the Project and the rights and obligations of the Parties concerning inter alia liability, Access Rights and dispute resolution.

## **3 Entry into force, duration and termination**

### **3.1 Entry into force**

An entity becomes a Party to this Consortium Agreement upon signature of this Consortium Agreement by a duly authorised representative.

This Consortium Agreement shall have effect from the Effective Date identified at the beginning of this Consortium Agreement.

An entity becomes a new Party to the Consortium Agreement upon signature of the accession document (Attachment 2) by the new Party and the Coordinator. Such accession shall have effect from the date identified in the accession document.

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### **3.2 Duration and termination**

This Consortium Agreement shall continue in full force and effect until complete fulfilment of all obligations undertaken by the Parties under the Grant Agreement and under this Consortium Agreement.

However, this Consortium Agreement or the participation of one or more Parties to it may be terminated in accordance with the terms of this Consortium Agreement.

If

- the Grant Agreement is not signed by the Granting Authority or a Party, or
- the Grant Agreement is terminated, or
- a Party's participation in the Grant Agreement is terminated,
- where applicable, national funding for an Associated Partner is terminated.

this Consortium Agreement shall automatically terminate in respect of the affected Party/ies, subject to the provisions surviving the expiration or termination under Section 3.3 of this Consortium Agreement.

### **3.3 Survival of rights and obligations**

The provisions relating to Access Rights, Dissemination and confidentiality, for the time period mentioned therein, as well as for liability, applicable law and settlement of disputes shall survive the expiration or termination of this Consortium Agreement.

Termination shall not affect any rights or obligations of a Party leaving the Project incurred prior to the date of termination, unless otherwise agreed between the General Assembly and the leaving Party. This includes the obligation to provide all necessary input, deliverables and documents for the period of its participation.

## **4 Responsibilities of Parties**

### **4.1 General principles**

Each Party undertakes to take part in the efficient implementation of the Project, and to cooperate, perform and fulfil, promptly and on time, all of its obligations under the Grant Agreement and this Consortium Agreement as may be reasonably required from it and in a manner of good faith as prescribed by Belgian law.

Each Party undertakes to notify promptly the Coordinator, Granting Authority and the other Parties, in accordance with the governance structure of the Project, of any significant information, fact, problem or delay likely to affect the Project.

Each Party shall promptly provide all information reasonably required by a Consortium Body or by the Coordinator to carry out its tasks and shall responsibly manage the access of its employees to the EU Funding & Tenders Portal.

Each Party shall take reasonable measures to ensure the accuracy of any information or materials it supplies to the other Parties.

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## 4.2 Breach

In the event that the General Assembly identifies a breach by a Party of its obligations under this Consortium Agreement or the Grant Agreement (e.g. improper implementation of the Project), the Coordinator or, if the Coordinator is in breach of its obligations, the Party appointed by the General Assembly, will give formal notice to such Party requiring that such breach will be remedied within 30 calendar days from the date of receipt of the written notice by the Party.

If such breach is substantial and is not remedied within that period or is not capable of remedy, the General Assembly may decide to declare the Party to be a Defaulting Party and to decide on the consequences thereof which may include termination of its participation.

The General Assembly may also decide to declare a Party to be a Defaulting Party and to decide on the consequences thereof which may include termination of its participation in the following circumstance:

The Party is, or is deemed for the purposes of any relevant law to be, unable to pay its debts as they fall due or to be insolvent, or admits inability to pay its debts as they fall due; or the Party suspends making payments on all or any class of its debts or announces an intention to do so, or a moratorium is declared in respect of any of its indebtedness; or any step (including the making of any proposal, the convening of any meeting, the passing of any resolution, the presenting of any petition or the making of any order) is taken with a view to a composition, assignment or arrangement with any creditors of, or the winding up, liquidation or dissolution of, the Party; or any liquidator, provisional liquidator, receiver or examiner is appointed to or in respect of the defaulting party or any of its assets.

## 4.3 Involvement of third parties

A Party that enters into a subcontract or otherwise involves third parties (including but not limited to Affiliated Entities or other Participants) in the Project remains responsible for carrying out its relevant part of the Project and for such third party's compliance with the provisions of this Consortium Agreement and of the Grant Agreement. Such Party has to ensure that the involvement of third parties does not affect the rights and obligations of the other Parties under this Consortium Agreement and the Grant Agreement.

## 4.4 Associated Partners

According to Article 9.1 of the Grant Agreement, Associated Partners must implement the action tasks attributed to them in Annex 1 'Description of the action' of the Grant Agreement in accordance with Articles 11 (proper implementation of the action), 12 (conflict of interests), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (recordkeeping) of the Grant Agreement also apply to Associated Partners and the Associated Partners also agree that the bodies mentioned in Article 25 of the Grant Agreement can exercise their rights towards the Associated Partners.

Associated Partners do not accede to the Grant Agreement, but are Party in the Consortium Agreement and shall comply with the contractual provisions of the Consortium Agreement, and of the Grant Agreement referred to in the Consortium Agreement, in the same way as other Parties, except the financial provisions, which do not apply to them. The Associated Partners may not charge costs or contributions to the action and the costs for their tasks are not eligible. The Associated Partners can receive financial contribution relating to its tasks in the Project from another funding authority. Those Associated Partners will also comply with the contractual requirements set by its funding authority. However, in case of conflict with the terms of the Grant Agreement or this is Consortium Agreement,

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the terms of the Grant Agreement and Consortium Agreement shall prevail ahead of any other funding agreement.

For clarification, by means of this clause 4.4 in the Consortium Agreement the Associated Partners have the same rights and obligations as the Beneficiaries except in clause 7 (financial provisions).

#### 4.5 Specific responsibilities regarding data protection

Where necessary, the Parties shall cooperate in order to enable one another to fulfil legal obligations arising under applicable data protection laws (the *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data* (GDPR) and relevant national data protection law applicable to said Party) within the scope of the performance and administration of the Project and of this Consortium Agreement.

In particular, the Parties shall, where necessary, conclude a separate data processing, data sharing and/or joint controller agreement before any data processing or data sharing takes place.

## 5 Liability towards each other

### 5.1 No warranties

Each Party undertakes to perform its work at its own risk and under its sole liability and shall support all consequences in compliance with the provisions hereunder.

In respect of any information or materials (incl. Results and Background) supplied by one Party to another under the Project, no warranty or representation of any kind is made, given or implied as to the sufficiency, accuracy or fitness for purpose nor as to the absence of any infringement of any proprietary rights of third parties .

Therefore,

- the recipient Party shall in all cases be entirely and solely liable for the use to which it puts such information and materials, and
- no Party granting Access Rights shall be liable in case of infringement of proprietary rights of a third party resulting from any other Party (or its entities under the same control) exercising its Access Rights.

### 5.2 Limitations of contractual liability

No Party shall be responsible to any other Party for any indirect or consequential loss or similar damage such as, but not limited to, loss of profit, loss of revenue or loss of contracts except in case of breach of confidentiality.

A Beneficiary's aggregate liability towards the other Parties collectively shall be limited to once the Beneficiary's share of the total costs of the Project as identified in Annex 2 of the Grant Agreement or for Associated Partners the value of the tasks assigned to that Associated Partner as identified in Annex 1b.

A Party's liability shall not be limited under either of the two foregoing paragraphs to the extent such damage was caused by a wilful act or to the extent that such limitation is not permitted by law.

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### **5.3 Damage caused to third parties**

Each Party shall be solely liable for any loss, damage or injury to third parties resulting from the performance of the said Party's obligations by it or on its behalf under this Consortium Agreement or from its use of Results or Background.

### **5.4 Force Majeure**

No Party shall be considered to be in breach of this Consortium Agreement if it is prevented from fulfilling its obligations under the Consortium Agreement by Force Majeure.

Each Party will notify the General Assembly of any Force Majeure without undue delay. If the consequences of Force Majeure for the Project are not overcome within 6 weeks after such notice, the transfer of tasks - if any - shall be decided by the General Assembly.

Export Control

No Party shall be considered to be in breach of this Consortium Agreement if it is prevented from fulfilling its obligations under the Consortium Agreement due to a restriction resulting from import or export laws and regulations and/or any delay of the granting or extension of the import or export license or any other governmental authorisation, provided that the Party has used its reasonable efforts to fulfil its tasks and to apply for any necessary license or authorisation properly and in time.

Each Party will notify the General Assembly of any such restriction without undue delay. If the consequences of such restriction for the Project are not overcome within 6 weeks after such notice, the transfer of tasks - if any - shall be decided by the General Assembly.

## **6 Governance structure**

### **6.1 General structure**

The organisational structure of the consortium shall comprise the following Consortium Bodies:

- The General Assembly as the ultimate decision-making body of the consortium
- The Project Steering Committee as the supervisory body for the execution of the Project, which shall report to and be accountable to the General Assembly
- The Coordinator as the legal entity acting as the intermediary between the Parties and the Granting Authority. The Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and this Consortium Agreement. The coordinator will be supported by the Management Support Team.

### **6.2 General operational procedures for all Consortium Bodies**

#### **6.2.1 Representation in meetings**

Any Party which is appointed to take part in a Consortium Body shall designate one representative (hereinafter referred to as "Member").

Any Member:

- should be present or represented at any meeting;
- may appoint a substitute or a proxy to attend and vote at any meeting;



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and shall participate in a cooperative manner in the meetings.

## 6.2.2 Preparation and organisation of meetings

### 6.2.2.1 Convening meetings:

The chairperson of a Consortium Body shall convene meetings of that Consortium Body.

	Ordinary meeting	Extraordinary meeting
General Assembly	At least once a year	At any time upon request of the Project Steering Committee or 1/3 of the Members of the General Assembly
Project Steering Committee	At least twice a year	At any time upon request of any Member of the Project Steering Committee

### 6.2.2.2 Notice of a meeting

The chairperson of a Consortium Body shall give written notice of a meeting to each Member of that Consortium Body as soon as possible and no later than the minimum number of days preceding the meeting as indicated below.

	Ordinary meeting	Extraordinary meeting
General Assembly	45 calendar days	15 calendar days
Project Steering Committee	14 calendar days	7 calendar days

### 6.2.2.3 Sending the agenda

The chairperson of a Consortium Body shall prepare and send each Member of that Consortium Body an agenda no later than the minimum number of days preceding the meeting as indicated below.

General Assembly	21 calendar days, 10 calendar days for an extraordinary meeting
Project Steering Committee	7 calendar days

### 6.2.2.4 Adding agenda items:

Any agenda item requiring a decision by the Members of a Consortium Body must be identified as such on the agenda.

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Any Member of a Consortium Body may add an item to the original agenda by written notice to all of the other Members of that Consortium Body up to the minimum number of days preceding the meeting as indicated below.

General Assembly	14 calendar days, 7 calendar days for an extraordinary meeting
Project Steering Committee	2 calendar days

#### 6.2.2.5

During a meeting the Members of a Consortium Body present or represented can unanimously agree to add a new item to the original agenda.

#### 6.2.2.6

Meetings of each Consortium Body may also be held by tele- or videoconference, or other telecommunication means.

#### 6.2.2.7

Decisions will only be binding once the relevant part of the minutes has been accepted according to Section 6.2.2.5.

#### 6.2.2.8

##### *Decisions without a meeting*

Any decision may also be taken without a meeting if

- a) the Coordinator circulates to all Members of the General Assembly a suggested decision with a deadline for responses of at least 10 calendar days after receipt by a Party and
- b) the decision is agreed by 60 % of all Parties.

The Coordinator shall inform all the Members of the outcome of the vote.

A veto according to Section 6.2.4 may be submitted up to 15 calendar days after receipt of this information.

The decision will be binding after the Coordinator sends a notification to all Members. The Coordinator will keep records of the votes and make them available to the Parties on request.

### **6.2.3 Voting rules and quorum**

#### 6.2.3.1

The General Assembly shall not deliberate and decide validly in meetings unless two-thirds (2/3) of its Members are present or represented (quorum).

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If the quorum is not reached, the chairperson of the General Assembly shall convene another ordinary meeting within 15 calendar days. If in this meeting the quorum is not reached once more, the chairperson shall convene an extraordinary meeting which shall be entitled to decide even if less than the quorum of Members is present or represented.

#### 6.2.3.2

Each Member present or represented in the meeting shall have one vote.

Associated Partners may not vote on a decision regarding the distribution or use of the EC financial contribution.

#### 6.2.3.3

A Party which the General Assembly has declared according to Section 4.2 to be a Defaulting Party may not vote.

#### 6.2.3.4

Decisions shall be taken by a majority of two-thirds (2/3) of the votes cast.

#### 6.2.3.5

The present or represented Members may decline to participate in a vote of the General Assembly by stating that they abstain, in which case they shall not be counted for the purposes of determining the majority of the votes as described in Section 6.2.3.4. On the contrary, the abstaining Members shall be counted for the purpose of determining the quorum of validity.

### **6.2.4 Veto rights**

#### 6.2.4.1

A Party which can show that its own work, time for performance, costs, liabilities, intellectual property rights or other legitimate interests would be severely affected by a decision of a Consortium Body may exercise a veto with respect to the corresponding decision or relevant part of the decision. Associated Partners may not veto a decision regarding the distribution or use of the Granting Authority's EC financial contribution.

#### 6.2.4.2

When the decision is foreseen on the original agenda, a Party may only veto such a decision during the meeting.

#### 6.2.4.3

When a decision has been taken on a new item added to the agenda before or during the meeting, a Party may veto such decision during the meeting or within 15 calendar days after receipt of the draft minutes of the meeting.

When a decision has been taken without a meeting a Party may veto such decision within 15 calendar days after written notice by the chairperson of the outcome of the vote.

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#### 6.2.4.4

In case of exercise of veto, the Parties shall make every effort to resolve the matter which occasioned the veto to the general satisfaction of all the Parties.

#### 6.2.4.5

A Party may neither veto decisions relating to its identification to be in breach of its obligations nor to its identification as a Defaulting Party. The Defaulting Party may not veto decisions relating to its participation and termination in the consortium or the consequences of them.

#### 6.2.4.6

A Party requesting to leave the consortium may not veto decisions relating thereto.

### **6.2.5 Minutes of meetings**

#### 6.2.5.1

The chairperson shall produce minutes of each meeting, which shall be the formal record of all decisions taken. He/she shall send the draft minutes to all Members within 5 calendar days of the meeting.

#### 6.2.5.2

The minutes shall be considered as accepted if, within 15 calendar days from receipt, no Member has sent an objection by written notice to the chairperson with respect to the accuracy of the draft of the minutes by written notice.

#### 6.2.5.3

The chairperson shall send the accepted minutes to all the Parties and to the Coordinator, who shall retain copies of them.

## **6.3 Specific operational procedures for the Consortium Bodies**

### **6.3.1 General Assembly**

In addition to the rules described in Section 6.2, the following rules apply:

#### 6.3.1.1 Members

##### 6.3.1.1.1

The General Assembly shall consist of one representative of each Party (hereinafter General Assembly Member).

##### 6.3.1.1.2

Each General Assembly Member shall be deemed to be duly authorised to deliberate, negotiate and decide on all matters listed in Section 6.3.1.2 of this Consortium Agreement.

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#### 6.3.1.1.3

The Coordinator shall chair all meetings of the General Assembly, unless decided otherwise in a meeting of the General Assembly.

#### 6.3.1.1.4

The Parties agree to abide by all decisions of the General Assembly. This does not prevent the Parties from exercising their veto rights, according to Section 6.2.4.1 or from submitting a dispute to resolution in accordance with the provisions of Settlement of disputes in Section 11.8.

#### 6.3.1.2 Decisions

The General Assembly shall be free to act on its own initiative to formulate proposals and take decisions in accordance with the procedures set out herein.

In addition, all proposals made by the Project Steering Committee shall also be considered and decided upon by the General Assembly.

The following decisions shall be taken by the General Assembly:

#### Content, finances and intellectual property rights

- Proposals for changes to Annexes 1 and 2 of the Grant Agreement to be agreed by the Granting Authority
- Changes to the Consortium Plan
- Modifications or withdrawal of Background in Attachment 1 (Background Included)
- Additions to Attachment 3 (List of Third Parties for simplified transfer according to Section 8.3.2)
- Additions to Attachment 4 (Identified entities under the same control)

#### Evolution of the consortium

- Entry of a new Party to the Project and approval of the settlement on the conditions of the accession of such a new Party
- Withdrawal of a Party from the Project and the approval of the settlement on the conditions of the withdrawal
- Identification of a breach by a Party of its obligations under this Consortium Agreement or the Grant Agreement
- Declaration of a Party to be a Defaulting Party
- Remedies to be performed by a Defaulting Party
- Termination of a Defaulting Party's participation in the Project and measures relating thereto
- Proposal to the Granting Authority for a change of the Coordinator
- Proposal to the Granting Authority for suspension of all or part of the Project
- Proposal to the Granting Authority for termination of the Project and the Consortium Agreement

#### Appointments

On the basis of the Grant Agreement, the appointment if necessary of:

- Project Steering Committee Members
- External Expert Advisory Board Members

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### **6.3.2 Project Steering Committee**

In addition to the rules in Section 6.2. the following rules shall apply:

#### **6.3.2.1 Members**

The Project Steering Committee shall consist of the Coordinator and the representatives of the Parties appointed to it by the General Assembly.

The Coordinator shall chair all meetings of the Project Steering Committee, unless decided otherwise by a majority of two-thirds.

#### **6.3.2.2 Minutes of meetings**

Minutes of Project Steering Committee meetings, once accepted, shall be sent by the Coordinator to the General Assembly Members for information.

#### **6.3.2.3 Tasks**

##### **6.3.2.3.1**

The Project Steering Committee shall prepare the meetings, propose decisions and prepare the agenda of the General Assembly according to Section 6.3.1.2.

##### **6.3.2.3.2**

The Project Steering Committee shall seek a consensus among the Parties.

##### **6.3.2.3.3**

The Project Steering Committee shall be responsible for the proper execution and implementation of the decisions of the General Assembly.

##### **6.3.2.3.4**

The Project Steering Committee shall monitor the effective and efficient implementation of the Project.

##### **6.3.2.3.5**

In addition, the Project Steering Committee shall collect information at least every 6 months on the progress of the Project, examine that information to assess the compliance of the Project with the Consortium Plan and, if necessary, propose modifications of the Consortium Plan to the General Assembly.

##### **6.3.2.3.6**

The Project Steering Committee shall:

- support the Coordinator in preparing meetings with the Granting Authority and in preparing related data and deliverables
- prepare the content and timing of press releases and joint publications by the consortium or proposed by the Granting Authority in respect of the procedures of the Grant Agreement Article 17 and Annex 5 Section "Communication, Dissemination, Open Science and Visibility" and of Section 8 of this Consortium Agreement

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- as necessary propose modifications to the work plan, the Grant Agreement and this Consortium Agreement for approval by the General Assembly and the Granting Authority EC if so required.
- ensure that activities are progressing according to the agreed schedule;
- direct the Project according to the present work plan taking preventive and corrective actions as needed.

#### 6.3.2.3.7

In the case of abolished tasks as a result of a decision of the General Assembly, the Project Steering Committee shall advise the General Assembly on ways to rearrange tasks and budgets of the Parties concerned. Such rearrangement shall take into consideration any prior legitimate commitments which cannot be cancelled.

## 6.4 Coordinator

### 6.4.1

The Coordinator shall be the intermediary between the Parties and the Granting Authority and shall perform all tasks assigned to it as described in the Grant Agreement and in this Consortium Agreement.

### 6.4.2

In particular, the Coordinator shall be responsible for:

- monitoring compliance by the Parties with their obligations under this Consortium Agreement and the Grant Agreement
- keeping the address list of Members and other contact persons updated and available
- collecting, reviewing to verify consistency and submitting reports, other deliverables (including financial statements and related certifications) and specific requested documents to the Granting Authority
- transmitting documents and information connected with the Project to any other Parties concerned
- administering the financial contribution of the Granting Authority and fulfilling the financial tasks described in Section 7.2
- providing, upon request, the Parties with official copies or originals of documents that are in the sole possession of the Coordinator when such copies or originals are necessary for the Parties to present claims
- fostering the use by all Parties of common communication and management tools supporting operational consistency and efficiency within the project.

If one or more of the Parties is late in submission of any Project deliverable, the Coordinator may nevertheless submit the other 'Parties' Project deliverables and all other documents required by the Grant Agreement to the Granting Authority in time.

### 6.4.3

If the Coordinator fails in its coordination tasks, the General Assembly may propose to the Granting Authority to change the Coordinator.

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#### **6.4.4**

The Coordinator shall not be entitled to act or to make legally binding declarations on behalf of any other Party or of the consortium, unless explicitly stated otherwise in the Grant Agreement or this Consortium Agreement.

#### **6.4.5**

The Coordinator shall not enlarge its role beyond the tasks specified in this Consortium Agreement and in the Grant Agreement.

### **6.5 External Innovation Advisory Board (EIAB)**

An External Innovation Advisory Board (EIAB) will be appointed and steered by the Project Steering Committee. The EIAB shall assist and facilitate the decisions made by the General Assembly.

The Coordinator will ensure that a non-disclosure agreement is executed between all Parties and each EIAB member.

Its terms shall be not less stringent than those stipulated in this Consortium Agreement, and it shall be concluded no later than 30 calendar days after their nomination or before any confidential information will be exchanged/disclosed, whichever date is earlier. The Coordinator shall write the minutes of the EIAB meetings and submit them to the General Assembly. The EIAB members shall be allowed to participate in General Assembly meetings upon invitation but have not any voting rights.

## **7 Financial provisions**

### **7.1 General Principles**

#### **7.1.1 Distribution of Financial Contribution**

The financial contribution of the Granting Authority to the Beneficiaries shall be distributed by the Coordinator according to:

- the Consortium Plan
- the approval of reports by the Granting Authority, and
- the provisions of payment in Section 7.2.

A Beneficiary shall be funded only for its tasks carried out in accordance with the Consortium Plan. The Associated Party SEI, OASIS, QOMPLX will comply with its obligations concerning the Project funded by UK Research and Innovation (UKRI). The Associated Party ETH will comply with its obligations concerning the Project funded by SERI

#### **7.1.2 Justifying Costs**

In accordance with its own usual accounting and management principles and practices, each Party shall be solely responsible for justifying its costs (and those of its Affiliated Entities, if any) with respect to the Project towards the Granting Authority. Neither the Coordinator nor any of the other Parties shall be in any way liable or responsible for such justification of costs towards the Granting Authority.



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### **7.1.3 Funding Principles**

A Beneficiary that spends less than its allocated share of the budget as set out in the Consortium Plan or – in case of reimbursement via unit costs - implements less units than foreseen in the Consortium Plan will be funded in accordance with its units/actual duly justified eligible costs only.

A Beneficiary that spends more than its allocated share of the budget as set out in the Consortium Plan will be funded only in respect of duly justified eligible costs up to an amount not exceeding that share.

### **7.1.4 Excess payments**

A Beneficiary has received excess payment

- a) if the payment received from the Coordinator exceeds the amount declared or
- b) if a Beneficiary has received payments but, within the last year of the Project, its real Project costs fall significantly behind the costs it would be entitled to according to the Consortium Plan.

In case a Beneficiary has received excess payment, the Beneficiary has to inform the Coordinator and return the relevant amount to the Coordinator without undue delay. In case no refund takes place within 30 days upon request for return of excess payment from the Coordinator, the Beneficiary is in substantial breach of the Consortium Agreement.

Amounts which are not refunded by a breaching Beneficiary and which are not due to the Granting Authority, shall be apportioned by the Coordinator to the remaining Beneficiaries pro rata according to their share of total costs of the Project as identified in the Consortium Budget, until recovery from the breaching Party is possible.

### **7.1.5 Revenue**

In case a Beneficiary earns any revenue that is deductible from the total funding as set out in the Consortium Plan, the deduction is only directed toward the Beneficiary earning such revenue. The other Beneficiaries' financial share of the budget shall not be affected by one Beneficiary's revenue. In case the relevant revenue is more than the allocated share of the Beneficiary as set out in the Consortium Plan, the Beneficiary shall reimburse the funding reduction suffered by other Beneficiaries.

### **7.1.6 Financial Consequences of the termination of the participation of a Beneficiary**

A Beneficiary leaving the consortium shall refund to the Coordinator any payments it has received except the amount of contribution accepted by the Granting Authority or another contributor.

In addition, a Defaulting Beneficiary shall, within the limits specified in Section 5.2 of this Consortium Agreement, bear any reasonable and justifiable additional costs occurring to the other Beneficiaries in order to perform the leaving Beneficiary's task and necessary additional efforts to fulfil them as a consequence of the Beneficiary leaving the consortium. The General Assembly should agree on a procedure regarding additional costs which are not covered by the Defaulting Beneficiary or the Mutual Insurance Mechanism.

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## 7.2 Payments

7.2.1 Payments to Beneficiary are the exclusive task of the Coordinator.

In particular, the Coordinator shall:

notify the Beneficiary concerned promptly and according to the defined project payment schedule, of the date and composition of the amount transferred to its bank account, giving the relevant references

perform diligently its tasks in the proper administration of any funds and in maintaining financial accounts

undertake to keep the Granting Authority's financial contribution to the Project separated from its normal business accounts, its own assets and property, except if the Coordinator is a Public Body or is not entitled to do so due to statutory legislation.

With reference to Article 22 of the Grant Agreement, no Beneficiary shall before the end of the Project receive more than its allocated share of the maximum grant amount less the amounts retained by the Granting Authority for the Mutual Insurance Mechanism and for the final payment.

### 7.2.2

The transfer of the initial pre-financing, the additional pre-financings (if any) and interim payments to Beneficiary will be handled in accordance with Article 22.1. and Article 7 of the Grant Agreement following the payment schedule as included in the GA:

Funding of costs included in the Consortium Plan will be paid by the Coordinator to the Beneficiary after receipt of payments from the Granting Authority without undue delay but no later than 45 days after receipt by the Coordinator and in conformity with the provisions of the Grant Agreement. Costs accepted by the Granting Authority will be paid to the Beneficiary concerned.

The Coordinator is entitled to withhold any payments due to a Beneficiary identified by the General Assembly to be in breach of its obligations under this Consortium Agreement or the Grant Agreement or to a Beneficiary which has not yet signed this Consortium Agreement.

The Coordinator is entitled to recover any payments already paid to a Defaulting Beneficiary except the costs already claimed by the Defaulting Beneficiary and accepted by the Granting Authority. The Coordinator is equally entitled to withhold payments to a Beneficiary when this is suggested by or agreed with the Granting Authority.

### 7.2.3 Payments to Associated Partners

The Payments to the Associated Partners SEI, OASIS will be governed by a separate agreement signed with their funding authority, UKRI

The Payments to Associated Partner ETH Zürich will be governed by a separate agreement signed with their funding authority, SERI.

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## **8 Results**

### **8.1 Ownership of Results**

Results are owned by the Party that generates them.

### **8.2 Joint ownership**

Joint ownership is governed by Grant Agreement Article 16.4 and its Annex 5, Section Ownership of results, with the following additions:

Unless otherwise agreed:

- each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research and teaching activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s).
- each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) fair and reasonable compensation.

The joint owners shall agree on all protection measures and the division of related cost in advance.

However the joint owners shall, as soon as possible after the creation of the joint Results enter into a joint ownership management agreement to agree on all protection measures, ownership percentages and the division of related costs in advance.

### **8.3 Transfer of Results**

#### **8.3.1**

Each Party may transfer ownership of its own Results, including its share in jointly owned Results, following the procedures of the Grant Agreement Article 16.4 and its Annex 5, Section Transfer and licensing of results, sub-section "Transfer of ownership".

#### **8.3.2**

Each Party may identify specific third parties it intends to transfer the ownership of its Results to in Attachment (3) of this Consortium Agreement. The other Parties hereby waive their right to prior notice and their right to object to such a transfer to listed third parties according to the Grant Agreement Article 16.4 and its Annex 5, Section Transfer of licensing of results, sub-section "Transfer of ownership", 3rd paragraph.

#### **8.3.3**

The transferring Party shall, however, at the time of the transfer, inform the other Parties of such transfer and shall ensure that the rights of the other Parties under the Consortium Agreement and the Grant Agreement will not be affected by such transfer. Any addition to Attachment (3) after signature of this Consortium Agreement requires a decision of the General Assembly.

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### **8.3.4**

The Parties recognise that in the framework of a merger or an acquisition of an important part of its assets, it may be impossible under applicable EU and national laws on mergers and acquisitions for a Party to give at least 45 calendar days prior notice for the transfer as foreseen in the Grant Agreement. The Parties however agree to give such notice without undue delay.

### **8.3.5**

The obligations above apply only for as long as other Parties still have - or still may request - Access Rights to the Results.

## **8.4 Dissemination**

### **8.4.1**

For the avoidance of doubt, the confidentiality obligations set out in Section 10 apply to all dissemination activities described in this Section 8.4 as far as Confidential Information is involved.

### **8.4.2 Dissemination of own (including jointly owned) Results**

#### **8.4.2.1**

During the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 17.4 of the Grant Agreement and its Annex 5, Section Dissemination, subject to the following provisions.

Prior notice of any planned publication shall be given to the other Parties at least 30 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement by written notice to the Coordinator and to the Party or Parties proposing the dissemination within 15 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

#### **8.4.2.2**

An objection is justified if

- a) the protection of the objecting Party's Results or Background would be adversely affected, or
- b) the objecting Party's legitimate interests in relation to its Results or Background would be significantly harmed, or
- c) the proposed publication includes Confidential Information of the objecting Party.

The objection has to include a precise request for necessary modifications.

#### **8.4.2.3**

If an objection has been raised the involved Parties shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting Party shall not unreasonably continue the opposition if appropriate measures are taken following the discussion.

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#### 8.4.2.4

The objecting Party can request a publication delay of not more than 60 calendar days from the time it raises such an objection. After 30 calendar days the publication is permitted, provided that the objections of the objecting Party have been addressed.

#### **8.4.3 Dissemination of another Party's unpublished Results or Background**

A Party shall not include in any dissemination activity another Party's Results or Background without obtaining the owning Party's prior written approval, unless they are already published.

#### **8.4.4 Cooperation obligations**

The Parties undertake to cooperate to allow the timely submission, examination, publication and defense of any dissertation or thesis for a degree that includes their Results or Background subject to the confidentiality and publication provisions agreed in this Consortium Agreement.

#### **8.4.5 Use of names, logos or trademarks**

Nothing in this Consortium Agreement shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

## **9 Access Rights**

### **9.1 Background included**

#### **9.1.1**

In Attachment 1, the Parties have identified and agreed on the Background for the Project and have also, where relevant, informed each other that Access to specific Background is subject to legal restrictions or limits.

Anything not identified in Attachment 1 shall not be the object of Access Right obligations regarding Background.

#### **9.1.2**

Any Party may add additional Background to Attachment 1 during the Project provided they give written notice to the other Parties. However, approval of the General Assembly is needed should a Party wish to modify or withdraw its Background in Attachment 1.

### **9.2 General Principles**

#### **9.2.1**

Each Party shall implement its tasks in accordance with the Consortium Plan and shall bear sole responsibility for ensuring that its acts within the Project do not knowingly infringe third party property rights.

#### **9.2.2**

Any Access Rights granted exclude any rights to sublicense unless expressly stated otherwise.

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### **9.2.3**

Access Rights shall be free of any administrative transfer costs.

### **9.2.4**

Access Rights are granted on a non-exclusive basis.

### **9.2.5**

Results and Background shall be used only for the purposes for which Access Rights to it have been granted.

### **9.2.6**

All requests for Access Rights shall be made in writing. The granting of Access Rights may be made conditional on the acceptance of specific conditions aimed at ensuring that these rights will be used only for the intended purpose and that appropriate confidentiality obligations are in place.

### **9.2.7**

The requesting Party must show that the Access Rights are Needed.

## **9.3 Access Rights for implementation**

Access Rights to Results and Background Needed for the performance of the own work of a Party under the Project shall be granted on a royalty-free basis, unless otherwise agreed for Background in Attachment 1.

## **9.4 Access Rights for Exploitation**

### **9.4.1 Access Rights to Results**

Access Rights to Results if Needed for Exploitation of a Party's own Results shall be granted on Fair and Reasonable conditions.

Access rights to Results for internal research and for teaching activities shall be granted on a royalty-free basis upon written bilateral agreement.

### **9.4.2**

Access Rights to Background if Needed for Exploitation of a Party's own Results, shall be granted on Fair and Reasonable conditions upon written bilateral agreement.

### **9.4.3**

A request for Access Rights may be made up to twelve months after the end of the Project or, in the case of Section 9.7.2.1.2, after the termination of the requesting Party's participation in the Project.

## **9.5 Access Rights for entities under the same control**

Entities under the same control have Access Rights under the conditions of the Grant Agreement Article 16.4 and its Annex 5, Section "Access rights to results and background", sub-section "Access

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rights for entities under the same control" if they are identified in Attachment 4 (Identified entities under the same control) to this Consortium Agreement.

Such Access Rights must be requested by the entity under the same control from the Party that holds the Background or Results. Alternatively, the Party granting the Access Rights may individually agree with the Party requesting the Access Rights to have the Access Rights include the right to sublicense to the latter's entity under the same control listed in Attachment 4. Access Rights to an entity under the same control shall be granted on Fair and Reasonable conditions and upon written bilateral agreement.

Entities under the same control which obtain Access Rights in return fulfil all confidentiality obligations accepted by the Parties under the Grant Agreement or this Consortium Agreement as if such entities were Parties.

Access Rights may be refused to entities under the same control if such granting is contrary to the legitimate interests of the Party which owns the Background or the Results.

Access Rights granted to any entity under the same control are subject to the continuation of the Access Rights of the Party with whom it is under the same control, and shall automatically terminate upon termination of the Access Rights granted to such Party.

Upon cessation of the status as an entity under the same control, any Access Rights granted to such former entity under the same control shall lapse.

Further arrangements with entities under the same control may be negotiated in separate agreements.

## **9.6 Additional Access Rights**

For the avoidance of doubt any grant of Access Rights not covered by the Grant Agreement or this Consortium Agreement shall be at the absolute discretion of the owning Party and subject to such terms and conditions as may be agreed between the owning and receiving Parties.

## **9.7 Access Rights for Parties entering or leaving the consortium**

### **9.7.1 New Parties entering the consortium**

As regards Results developed before the accession of the new Party, the new Party will be granted Access Rights on the conditions applying for Access Rights to Background.

### **9.7.2 Parties leaving the consortium**

#### **9.7.2.1 Access Rights granted to a leaving Party**

##### **9.7.2.1.1 Defaulting Party**

Access Rights granted to a Defaulting Party and such Party's right to request Access Rights shall cease immediately upon receipt by the Defaulting Party of the formal notice of the decision of the General Assembly to terminate its participation in the consortium.

##### **9.7.2.1.2 Non-defaulting Party**

A non-defaulting Party leaving voluntarily and with the other Parties' consent shall have Access Rights to the Results developed until the date of the termination of its participation.

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It may request Access Rights within the period of time specified in Section 9.4.3.

#### 9.7.2.2 Access Rights to be granted by any leaving Party

Any Party leaving the Project shall continue to grant Access Rights pursuant to the Grant Agreement and this Consortium Agreement as if it had remained a Party for the whole duration of the Project.

## 9.8 Specific provisions for Access Rights to Software

### 9.8.1 Definitions relating to Software

“Application Programming Interface” or “API”

means the application programming interface materials and related documentation containing all data and information to allow skilled Software developers to create Software interfaces that interface or interact with other specified Software.

“Controlled License Terms” means terms in any license that require that the use, copying, modification and/or distribution of Software or another work (“Work”) and/or of any work that is a modified version of or is a derivative work of such Work (in each case, “Derivative Work”) be subject, in whole or in part, to one or more of the following:

- a) (where the Work or Derivative Work is Software) that the Source Code or other formats preferred for modification be made available as of right to any third party on request, whether royalty-free or not;
- b) that permission to create modified versions or derivative works of the Work or Derivative Work be granted to any third party;
- c) that a royalty-free license relating to the Work or Derivative Work be granted to any third party.

For the avoidance of doubt, any Software license that merely permits (but does not require any of the things mentioned in (a) to (c) is not under Controlled License Terms.

“Object Code” means Software in machine-readable, compiled and/or executable form including, but not limited to, byte code form and in form of machine-readable libraries used for linking procedures and functions to other software.

“Software Documentation” means Software information, being technical information used, or useful in, or relating to the design, development, use or maintenance of any version of a Software programme.

“Source Code” means Software in human readable form normally used to make modifications to it including, but not limited to, comments and procedural code such as job control language and scripts to control compilation and installation.

### 9.8.2 General principles

For the avoidance of doubt, the general provisions for Access Rights provided for in this Section 9 are applicable also to Software as far as not modified by this Section 9.6.

Parties' Access Rights to Software do not include any right to receive Source Code or Object Code ported to a certain hardware platform or any right to receive Source Code, Object Code or respective Software Documentation in any particular form or detail, but only as available from the Party granting the Access Rights.



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The introduction of Software under Controlled License Terms in the Project requires the prior approval of the General Assembly to implement such introduction into the Consortium Plan.

The Parties are aware that where open source software is used for the implementation of the Project, the resulting software may be subject to open source licenses

In case of an [approved] introduction of Software under Controlled License Terms' in the Project, the Controlled License Terms shall prevail over any conflicting provisions of this Consortium Agreement for affected original and derivative Background and Results.

### **9.8.3 Access to Software**

Access Rights to Software that is Results shall comprise:

- Access Rights to the Object Code; and,
- where normal use of such an Object Code requires an API, then the Access Rights shall also include the Object Code and such an API; and,
- if a Party can show that the execution of its tasks under the Project or the Exploitation of its own Results is technically or legally impossible without Access Rights to the Source Code, Access Rights to the Source Code to the extent necessary.

Background shall only be provided in Object Code unless otherwise agreed between the Parties concerned.

### **9.8.4 Software license and sublicensing rights**

#### **9.8.4.1 Object Code**

##### **9.8.4.1.1 Results - Rights of a Party**

Where a Party has Access Rights to Object Code and/or API that is Results for Exploitation, such Access shall, in addition to the Access for Exploitation foreseen in Section 9.4, as far as Needed for the Exploitation of the Party's own Results, comprise the right:

- to make an agreed number of copies of Object Code and API; and
- to distribute, make available, market, sell and offer for sale such Object Code and API alone or as part of or in connection with products or services of the Party having the Access Rights;

provided however that any product, process or service has been developed by the Party having the Access Rights in accordance with its rights to exploit Object Code and API for its own Results.

If it is intended to use the services of a third party for the purposes of this Section 9.8.4.1.1 the Parties concerned shall agree on the terms thereof with due observance of the interests of the Party granting the Access Rights as set out in Section 6.2 of this Consortium Agreement.

##### **9.8.4.1.2 Results - Rights to grant sublicenses to end-users**

In addition, Access Rights to Object Code shall, as far as Needed for the Exploitation of the Party's own Results, comprise the right to grant in the normal course of the relevant trade to end-user customers buying/using the product/services, a sublicense to the extent as necessary for the normal use of the relevant product or service to use the Object Code alone or as part of or in connection with or integrated into products and services of the Party having the Access Rights and, as far as technically essential:

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- to maintain such product/service;
- to create for its own end-use interacting interoperable Software in accordance with the Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs.

#### 9.8.4.1.3 Background

For the avoidance of doubt, where a Party has Access Rights to Object Code and/or API that is Background for Exploitation, Access Rights exclude the right to sublicense. Such sublicensing rights may, however, be negotiated between the Parties.

#### 9.8.4.2 Source Code

##### 9.8.4.2.1 Results - Rights of a Party

Where, in accordance with Section 6.6.3. a Party has Access Rights to Source Code that is Results for Exploitation, Access Rights to such Source Code, as far as Needed for the Exploitation of the Party's own Results, shall comprise a worldwide right to use, to make copies, to modify, to develop, to adapt Source Code for research, to create/market a product/process and to create/provide a service.

If it is intended to use the services of a third party for the purposes of this Section 9.8.4.2.1, the Parties shall agree on the terms thereof, with due observance of the interests of the Party granting the Access Rights as set out in Section 9.2 of this Consortium Agreement.

##### 9.8.4.2.2 Results – Rights to grant sublicenses to end-users

In addition, Access Rights, as far as Needed for the Exploitation of the Party's own Results, shall comprise the right to sublicense such Source Code, but solely for purpose of adaptation, error correction, maintenance and/or support of the Software.

Further sublicensing of Source Code is explicitly excluded.

##### 9.8.4.2.3 Background

For the avoidance of doubt, where a Party has Access Rights to Source Code that is Background for Exploitation, Access Rights exclude the right to sublicense. Such sublicensing rights may, however, be negotiated between the Parties.

#### 9.8.5 Specific formalities

Each sublicense granted according to the provisions of Section 9.8.4 shall be made by a traceable agreement specifying and protecting the proprietary rights of the Party or Parties concerned.

## 10 Non-disclosure of information

### 10.1

All information in whatever form or mode of communication, which is disclosed by a Party (the "Disclosing Party") to any other Party (the "Recipient") in connection with the Project during its implementation and which has been explicitly marked as "confidential" at the time of disclosure, or when disclosed orally has been identified as confidential at the time of disclosure and has been

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confirmed and designated in writing within 15 calendar days from oral disclosure at the latest as confidential information by the Disclosing Party, is "Confidential Information".

## 10.2

The Recipients hereby undertake in addition and without prejudice to any commitment on non-disclosure under the Grant Agreement, for a period of 5 years after the end of the Project:

- not to use Confidential Information otherwise than for the purpose for which it was disclosed;
- not to disclose Confidential Information to any third party (other than its Affiliated Entities and Sub-contractors) without the prior written consent by the Disclosing Party, wherein the Recipient must ensure that an arrangement is in place prior to such disclosure that subjects the Affiliated Entities and/or Subcontractors to provisions at least as strict as provided in this Section 10;
- to ensure that internal distribution of Confidential Information by a Recipient shall take place on a strict need-to-know basis; and
- to return to the Disclosing Party, or destroy, on request all Confidential Information that has been disclosed to the Recipients including all copies thereof and to delete all information stored in a machine-readable form to the extent practically possible. The Recipients may keep a copy to the extent it is required to keep, archive or store such Confidential Information because of compliance with applicable laws and regulations or for the proof of on-going obligations provided that the Recipient complies with the confidentiality obligations herein contained with respect to such copy.

## 10.3

The Recipients shall be responsible for the fulfilment of the above obligations on the part of their employees or third parties involved in the Project.

## 10.4

The above shall not apply for disclosure or use of Confidential Information, if and in so far as the Recipient can show that:

- the Confidential Information has become or becomes publicly available by means other than a breach of the Recipient's confidentiality obligations;
- the Disclosing Party subsequently informs the Recipient that the Confidential Information is no longer confidential;
- the Confidential Information is communicated to the Recipient without any obligation of confidentiality by a third party who is to the best knowledge of the Recipient in lawful possession thereof and under no obligation of confidentiality to the Disclosing Party;
- the disclosure or communication of the Confidential Information is foreseen by provisions of the Grant Agreement;
- the Confidential Information, at any time, was developed by the Recipient completely independently of any such disclosure by the Disclosing Party;
- the Confidential Information was already known to the Recipient prior to disclosure, or
- the Recipient is required to disclose the Confidential Information in order to comply with applicable laws or regulations or with a court or administrative order, subject to the provision Section 10.7 hereunder.

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## 10.5

The Recipient shall apply the same degree of care with regard to the Confidential Information disclosed within the scope of the Project as with its own confidential and/or proprietary information, but in no case less than reasonable care.

## 10.6

Each Recipient shall promptly inform the relevant Disclosing Party by written notice of any unauthorised disclosure, misappropriation or misuse of Confidential Information after it becomes aware of such unauthorised disclosure, misappropriation or misuse.

## 10.7

If any Recipient becomes aware that it will be required, or is likely to be required, to disclose Confidential Information in order to comply with applicable laws or regulations or with a court or administrative order, it shall, to the extent it is lawfully able to do so, prior to any such disclosure

- notify the Disclosing Party, and
- comply with the Disclosing Party's reasonable instructions (subject always to the applicable law governing such disclosure) to protect the confidentiality of the information.

# 11 Miscellaneous

## 11.1 Attachments, inconsistencies and severability

This Consortium Agreement consists of this core text and:

- Attachment 1 (Background included)
- Attachment 2 (Accession document)
- Attachment 3 (List of third parties for simplified transfer according to Section 8.3.2)
- Attachment 4 (Identified entities under the same control )
- Attachment 5 (NDA for External Innovation Advisory Board agreed under Section 6)
- Attachment 6 (Description of the actions undertaken by the Associated Partners)
- Attachment 7 (Copy of the Articles 9, 11 – 14, 17 – 20 and 25 and the Annex 1 of the Grant Agreement)

In case the terms of this Consortium Agreement are in conflict with the terms of the Grant Agreement, the terms of the latter shall prevail. In case of conflicts between the attachments and the core text of this Consortium Agreement, the latter shall prevail.

Should any provision of this Consortium Agreement become invalid, illegal or unenforceable, it shall not affect the validity of the remaining provisions of this Consortium Agreement. In such a case, the Parties concerned shall be entitled to request that a valid and practicable provision be negotiated that fulfils the purpose of the original provision.

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## **11.2 No representation, partnership or agency**

Except as otherwise provided in Section 6.4.4 no Party shall be entitled to act or to make legally binding declarations on behalf of any other Party or of the consortium. Nothing in this Consortium Agreement shall be deemed to constitute a joint venture, agency, partnership, interest grouping or any other kind of formal business grouping or entity between the Parties.

## **11.3 Formal and written notices**

Any notice to be given under this Consortium Agreement shall be addressed to the recipients as listed in the most current address list kept by the Coordinator.

Any change of persons or contact details shall be immediately communicated to the Coordinator by written notice. The address list shall be accessible to all Parties.

Formal notices:

If it is required in this Consortium Agreement (Sections 4.2, 9.7.2.1.1, and 11.4) that a formal notice, consent or approval shall be given, such notice shall be signed by an authorised representative of a Party and shall either be served personally or sent by mail with recorded delivery with acknowledgement of receipt.

Written notice:

Where written notice is required by this Consortium Agreement, this is fulfilled also by other means of communication such as e-mail with acknowledgement of receipt.

## **11.4 Assignment and amendments**

Except as set out in Section 8.3, no rights or obligations of the Parties arising from this Consortium Agreement may be assigned or transferred, in whole or in part, to any third party without the other Parties' prior formal approval.

Amendments and modifications to the text of this Consortium Agreement not explicitly listed in 6.3.1.2 require a separate written agreement to be signed between all Parties.

## **11.5 Mandatory national law**

Nothing in this Consortium Agreement shall be deemed to require a Party to breach any mandatory statutory law under which the Party is operating.

## **11.6 Language**

This Consortium Agreement is drawn up in English, which language shall govern all documents, notices, meetings, arbitral proceedings and processes relative thereto.

## **11.7 Applicable law**

This Consortium Agreement shall be construed in accordance with and governed by the laws of Belgium excluding its conflict of law provisions.

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

### **11.8 Settlement of disputes**

The Parties shall endeavour to settle their disputes amicably.

Any dispute, controversy or claim arising under, out of or relating to this contract and any subsequent amendments of this contract, including, without limitation, its formation, validity, binding effect, interpretation, performance, breach or termination, as well as non-contractual claims, shall be submitted to mediation in accordance with the WIPO Mediation Rules. The place of mediation shall be Brussels unless otherwise agreed upon. The language to be used in the mediation shall be English unless otherwise agreed upon.

If, and to the extent that, any such dispute, controversy or claim has not been settled pursuant to the mediation within 60 calendar days of the commencement of the mediation, the courts of Brussels shall have exclusive jurisdiction.

Nothing in this Consortium Agreement shall limit the Parties' right to seek injunctive relief in any applicable competent court.

### **11.9 Insurance**

Each Party shall to the extent legally possible maintain in effect at its own expense during the term of this Agreement and for a period of 60 months thereafter appropriate and adequate insurance that a prudent person in the position of that party would undertake and shall provide documentary evidence of that insurance to another Party upon request. The policies of insurances shall be with insurers of good standing in the marketplace in which the Party operates. For the avoidance of doubt, if a Party cannot maintain insurance due to national law then they hereby confirm that they are self-insured.

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

## 12 Signatures

### AS WITNESS:

The Parties have caused this Consortium Agreement to be duly signed by the undersigned authorised representatives in separate signature pages the day and year first above written.

TECHNISCHE UNIVERSITÄT BRAUNSCHWEIG

Signature(s)

Name(s) Dietmar Smyrek

Title(s) Vice president for Human Resources,  
Finance and Infrastructure (HVP)

Date

Technische Universität Braunschweig  
Leichtweiß-Institut für Wasserbau  
Abt. Hydrologie und  
Flussgebietsmanagement  
Beethovenstraße 51 a  
38106 Braunschweig

Prof. Dr.-Ing. Kai Schröter

Head of Division Hydrology and River  
Basin Management

8/9/2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

POTSDAM-INSTITUT FUR KLIMAFOLGENFORSCHUNG e. V. (PIK)

Signature(s)

Name(s)	 Prof. Dr. Ottmar Edenhofer	 Dr. Bettina Hörstrup
Title(s)	Director	administrative Director
Date	12.09.2022	12.09.2022

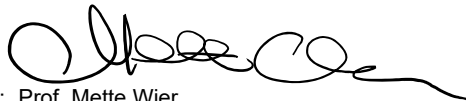
1.0.  
KWA



[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

**DANMARKS TEKNISKE UNIVERSITET**

Signature(s)

A handwritten signature in black ink, appearing to read 'Mette Wier', with a long horizontal flourish extending to the right.

Name: Prof. Mette Wier

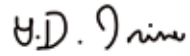
Title: Head of Department, DTU Management

Date: 08-09-2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

OASIS HUB LIMITED

Signature(s)

Handwritten signature in black ink, appearing to read "T.D. Irvine".

Name(s) Tracy Irvine

Title(s) Managing Director

Date 13.09.2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

GECOSISTEMA SRL

Signature(s)



GECOSistema S.r.l.  
Piazza Michelangelo 21, 47923 Rimini  
Viale G. Cesare 10, 47023 Cesena  
C.F. - P. IVA 04213740333  
Tel 0547-22619 Fax 0547-367336  
www.gecosistema.it

Name(s) STEFANO BAGLI

Title(s) CEO

Date 07/09/2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

## INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES, EV

Signature(s)



Digital signiert von Mark Lawrence  
 DN: cn=Mark Lawrence, c=DE,  
 o=IASS Potsdam, ou=DIR Lawrence,  
 email=mark.lawrence@iass-  
 potsdam.de  
 Datum: 2022.09.21 10:51:29 +02'00'



Digital signiert von Ortwin Renn  
 DN: cn=Ortwin Renn, c=DE,  
 o=IASS Potsdam,  
 ou=Wissenschaftlicher Direktor,  
 email=ortwin.renn@iass-  
 potsdam.de  
 Datum: 2022.09.21 12:46:48  
 +02'00'

Name(s) Prof. Dr. Mark Lawrence,

Prof. Dr. Ortwin Renn

Title(s) Manag. Sc. Director

Scientific Director

Date Potsdam, Sept. 8th, 2022

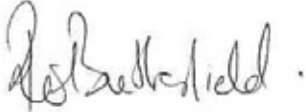
Herbert  
Küster

Herbert Küster  
 cn=Herbert Küster, c=DE, o=Institute for  
 Advanced Sustainability Studies e.V.,  
 ou=Verwaltungsstelle,  
 email=herbert.kuester@iass-potsdam.de  
 Ich bin mit den angegebenen Teilen dieses  
 Dokuments einverstanden  
 12/September2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

SEI OXFORD OFFICE LIMITED

Signature(s) .



Name(s) Ruth Butterfield

Title(s) Director

Date 29/09/2022



Sukaina Bharwani

Senior Researcher & weADAPT Coordinator

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

**UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK**



**Signature(s)**

**Name(s) Dr David O'Connell**

**Title(s) Director of Research and Policy**

**Date 7<sup>th</sup> September 2022**

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

REGION HOVEDSTADEN

Signature

A handwritten signature in blue ink, consisting of a circular loop followed by a horizontal line that extends to the right and then curves slightly upwards.

Name David Meinke

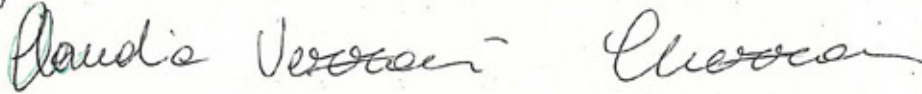
Title Centre Director

Date Hillerød, d. September 15th 2022

[DIRECTED] Consortium Agreement, version [4.0]. [29.08.2022]

AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE

Signature(s)

A handwritten signature in black ink, appearing to read 'Claudia Vezzani', written in a cursive style.

Name(s) Claudia Vezzani

Title(s) Manager

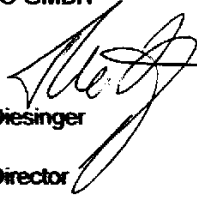
Date



[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

GENILLARD & CO GMBH

Signature:



Name: Thomas Diesinger

Title: Managing Director

Date: 14.09.2022



[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE

Signature(s)

Name(s)

Title(s)

Date

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

ERFTVERBAND, EV

Signature(s)



Name(s) Dr. Bernd Bucher

Title(s) CEO

Date 13/09/22

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

52°NORTH SPATIAL INFORMATION RESEARCH GmbH

Signature(s)



Name(s) Dr. Benedikt Gräler or Dr. Simon Jirka or Matthes Rieke

Title(s) Managing Director

Date 21.9.2022, München

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET

Signature(s)



Name(s) Péter HORVÁTH

Title(s) President

Date 09/09/2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

AGENZIA REGIONALE PER LA PREVENZIONE, L'AMBIENTE E L'ENERGIA DELL'EMILIA-  
ROMAGNA

Signature(s)

*Sandro Nanni*

Name(s) Sandro Nanni

Title(s) Head of Arpae SIMC

Date 08/09/2022

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM

Signature(s)

Date, Potsdam 22. Sep. 2022



Prof. Dr. Susanne Buitter

Scientific Executive Board



Dr. Stefan Schwartze

Administrative Executive Board

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH

Signature p.p. Agatha Keller

Name Prof. Dr. Detlef Günther

Title Vice President Research

Date/Stamp

21. SEP. 2022





[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

## **Attachment 1: Background included**

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to Potsdam-Institut für Klimafolgenforschung eV. (PIK), it is agreed between the Parties that, to the best of their knowledge,

the following Background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions, shall be as mentioned hereunder:

<b>Describe Background</b>	<b>Specific restrictions and/or conditions for implementation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights to background and results for implementing the Action”)</b>	<b>Specific restrictions and/or conditions for Exploitation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights for exploiting the results”)</b>
Eco-hydrological model SWIM in the Danube set-up and interface	Provision only upon approval by PIK	Exploitation only upon approval by PIK
ISIMIP scenario and impact data	Provision only upon approval by PIK	Exploitation only upon approval by PIK
Weather generator and other climate data compiled by PIK	Provision only upon approval by PIK	Exploitation only upon approval by PIK

[

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to GECO, it is agreed between the Parties that, to the best of their knowledge,

the following Background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions, shall be as mentioned hereunder:

<b>Describe Background</b>	<b>Specific restrictions and/or conditions for implementation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights to background and results for implementing the Action”)</b>	<b>Specific restrictions and/or conditions for Exploitation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights for exploiting the results”)</b>
SaferPlaces – AI-based Digital Twin Solution for flood risk intelligence	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that GECO is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights are subject to written request.</p> <p>The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that GECO is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
Data, software, know-how, intellectual property or information that has been generated by GECO, and which is related to the work plan, aims and objectives of the DIRECTED?? Project.	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that GECO is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that GECO is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are</p>

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

	<p>are subject to written request.</p> <p>The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>	<p>subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
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[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to The Capital Region of Denmark, it is agreed between the Parties that, to the best of their knowledge,

No data, know-how or information of The Capital Region of Denmark is Needed by another Party for implementation of the Project (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights to background and results for implementing the action") or Exploitation of that other Party's Results (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights for exploiting the results").

This represents the status at the time of signature of this Consortium Agreement.

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to [AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE], it is agreed between the Parties that, to the best of their knowledge,

the following Background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions, shall be as mentioned hereunder:

<b>Describe Background</b>	<b>Specific restrictions and/or conditions for implementation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights to background and results for implementing the Action”)</b>	<b>Specific restrictions and/or conditions for Exploitation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights for exploiting the results”)</b>
<p>DRR and CCA tools and models for supporting both early warning and long-term CCA strategies.</p>	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that ARSTPC-ER is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights are subject to written request.</p> <p>The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that ARSTPC-ER is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
<p>Data, software, know-how, intellectual property or information that has been generated by ARSTPC-ER, and which is related to the work plan, aims and objectives of the DIRECTED</p>	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that ARSTPC-ER is able to grant Access Rights to the Background,</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that ARSTPC-ER is able to grant Access Rights to said Background, including legal restrictions or limits</p>

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

<p>Project.</p>	<p>including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights are subject to written request.</p> <p>The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>	<p>including those imposed by third parties. Access Rights are subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
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[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to SEI Oxford Office Ltd, it is agreed between the Parties that, to the best of their knowledge, the following Background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions, shall be as mentioned hereunder:

<b>Describe Background</b>	<b>Specific restrictions and/or conditions for implementation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights to background and results for implementing the Action”)</b>	<b>Specific restrictions and/or conditions for Exploitation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights for exploiting the results”)</b>
weADAPT platform. weADAPT is an online platform led and maintained by SEI.	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that SEI Oxford Office Ltd is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights are subject to written request.</p> <p>The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that SEI Oxford Office Ltd is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
Connectivity Hub. The Connectivity Hub is developed and maintained by SEI.	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that SEI Oxford Office Ltd is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that SEI Oxford Office Ltd is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are</p>



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	<p>licenses of software and data. Access Rights are subject to written request. The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted</p>	<p>subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
Taxonomies for CCA & DRR.	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECTED Project and provided that SEI Oxford Office Ltd is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights are subject to written request. The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that SEI Oxford Office Ltd is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are subject to written requests.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
Data, software, know-how, intellectual property or information that has been generated by SEI Oxford Office Ltd, and which is related to the work plan, aims and objectives of the DIRECTED Project.	<p>Access for implementation is only granted to the extent it is needed for the Parties concerned to carry out their tasks in the DIRECT Project and provided that SEI Oxford Office Ltd is able to grant Access Rights to the Background, including legal restrictions or limits. This includes limitations imposed licenses of software and data. Access Rights are subject to written request.</p>	<p>Access for exploitation is only to the extent it is needed to exploit its own results and provided that SEI Oxford Office Ltd is able to grant Access Rights to said Background, including legal restrictions or limits including those imposed by third parties. Access Rights are subject to written requests.</p>

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	<p>The Access rights are granted for the purpose of the DIRECTED project only and may be restricted if this results in the infringement of third party rights.</p> <p>All commercial and third party Software is excluded and no Access Rights are granted.</p>	<p>All commercial and third party Software is excluded and no Access Rights are granted.</p>
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This represents the status at the time of signature of this Consortium Agreement.

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As to GFZ, it is agreed between the Parties that, to the best of their knowledge, [insert the relevant option here].

No data, know-how or information of GFZ is Needed by another Party for implementation of the Project (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights to background and results for implementing the action") or Exploitation of that other Party's Results (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights for exploiting the results").

This represents the status at the time of signature of this Consortium Agreement.

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As to EIDEGNOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH (ETH Zürich), it is agreed between the Parties that, to the best of their knowledge,

No data, know-how or information of ETH Zürich is Needed by another Party for implementation of the Project (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights to background and results for implementing the action") or Exploitation of that other Party's Results (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights for exploiting the results").

This represents the status at the time of signature of this Consortium Agreement.

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to UCC, it is agreed between the Parties that, to the best of their knowledge, No data, know-how or information of UCC is Needed by another Party for implementation of the Project (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights to background and results for implementing the action") or Exploitation of that other Party's Results (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights for exploiting the results").

This represents the status at the time of signature of this Consortium Agreement.

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

As to IASS, it is agreed between the Parties that, to the best of their knowledge,

No data, know-how or information of IASS is Needed by another Party for implementation of the Project (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights to background and results for implementing the action") or Exploitation of that other Party's Results (Article 16.1 and its Annex 5 Grant Agreement, Section "Access rights to results and background", sub-section "Access rights for exploiting the results").

This represents the status at the time of signature of this Consortium Agreement.

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As to 52°NORTH SPATIAL INFORMATION RESEARCH GmbH, it is agreed between the Parties that, to the best of their knowledge, the following Background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions, shall be as mentioned hereunder:

<b>Describe Background</b>	<b>Specific restrictions and/or conditions for implementation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights to background and results for implementing the Action”)</b>	<b>Specific restrictions and/or conditions for Exploitation (Article 16.4 Grant Agreement and its Annex 5, Section “Access rights to results and background”, sub-section “Access rights for exploiting the results”)</b>
Know-how of 52°North on Spatial Information Infrastructure/Research Data Infrastructure technologies, Web-based geo-processing technologies, and data analytics.	The content access is granted with the condition that the results are reviewed by the party, and the party is listed as author.	The content access is granted with the condition that the results are reviewed by the party, and the party is listed as author.
Open source software available in the 52°North repositories.	The content access is granted with the condition that the results are reviewed by the party, and the party is listed as author. If this software is used, the license of the software package must be followed.	The content access is granted with the condition that the results are reviewed by the party, and the party is listed as author. If this software is used, the license of the software package must be followed.

This represents the status at the time of signature of this Consortium Agreement.

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## Attachment 2: Accession document

ACCESSION

of a new Party to

[Acronym of the Project] Consortium Agreement, version [..., YYYY-MM-DD]

[OFFICIAL NAME OF THE NEW PARTY AS IDENTIFIED IN THE Grant Agreement]

hereby consents to become a Party to the Consortium Agreement identified above and accepts all the rights and obligations of a Party starting [date].

[OFFICIAL NAME OF THE COORDINATOR AS IDENTIFIED IN THE Grant Agreement]

hereby certifies that the consortium has accepted in the meeting held on [date] the accession of [the name of the new Party] to the consortium starting [date].

This Accession document has been done in 2 originals to be duly signed by the undersigned authorised representatives.

[Date and Place]

[INSERT NAME OF THE NEW PARTY]

Signature(s)

Name(s)

Title(s)

[Date and Place]

[INSERT NAME OF THE COORDINATOR]

Signature(s)

Name(s)

Title(s)



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**Attachment 3: List of third parties for simplified transfer according to Section 8.3.2.**

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**[Option: Attachment 4: Identified entities under the same control  
according to Section 9.5]**

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**[Option: Attachment 5: NDA for External Innovation Advisory Board  
agreed under Section 6]**

[DIRECTED] Consortium Agreement, version [4.0], [29.08.2022]

## **Attachment 6: Description of the actions undertaken by the Associated Partners**

The actions undertaken by the associated partners SEI, OASIS and ETH are described in Annex I of the Grant Agreement. [details will be added here]

Table Overview of DIRECTED consortium partners' skills and expertise for the priority working areas

Area of expertise	Research and Innovation							Communication & Exploitation					Policy & Society Interface				
	TTIRS/CEF7	DIK	DTTI	ETH	IASS	SEI	IIASA	OASIS	CFCC	TIC	52N	G&C	REGIONH	ARSTDC-FR	FV	7SRT	ADPAE
<b>Priority thematic areas</b>																	
<b>DRR + CCA</b>																	
Hazard modelling	X	X	X	X				X	X					X		X	X
Risk modelling and assessment	X	X	X	X	X			X	X	X		X		X		X	X
Early warning	X	X		X	X				X					X		X	X
Emergency response			X		X									X		X	
Climate adaptation		X	X	X		X		X	X	X				X			
Climate Change Projections		X	X					X		X						X	X
Climate Change impact assessment	X	X	X	X	X			X	X	X		X					X
User and stakeholder engagement	X	X	X	X	X	X		X	X	X		X	X	X		X	
<b>Social Sciences and Humanities</b>																	
Risk governance			X		X	X				X		X	X	X		X	
Co-production and implementation	X	X	X		X	X			X	X		X	X	X		X	X
Environmental economics			X														
Human geography						X		X	X		X					X	X
Sociology and psychology					X											X	
Political science					X	X				X							
Training program design		X	X		X	X				X						X	
<b>Technology &amp; market knowledge</b>																	
data management systems	X	X	X	X				X	X	X	X			X		X	X
IT-services		X				X		X	X							X	X
cloud computing		X							X		X						
business model innovation								X	X		X	X				X	
evaluation of impacts		X		X	X			X	X	X		X		X		X	
special rescue equipment and innovation														X		X	
Data Architecture											X						
Data analytics											X						
Big data and real-time data pipelines											X						
Data Fabric											X						
Cyber risk management											X						

### 3.2.1 Role and budget of Associated Partners

The DIRECTED consortium includes three associated partners from UK (OASIS, SEI) and one associated partner from Switzerland (ETH). The role and contribution of these partners is detailed in the work-package descriptions and assignment of responsibilities for deliverables.

The Associated Partners OASIS, SEI, and ETH will not receive any EU funding and the budget set out in this subsection (Table Associated partners budget) will be provided by the UK and Swiss Governments respectively. The Swiss Government has provided a financial guarantee (<https://www.sbfi.admin.ch/sbfi/en/home/research-and-innovation/international-cooperation-r-and-i/eu-framework-programmes-for-research/horizon-europe.html/>) to cover the project costs of Swiss organisations.

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OASIS HUB limited is based in London (UK). OASIS works as an aggregator for catastrophe, extreme weather and environmental risk data, tools & services, as well to provide data set enhancement, development and data aggregation services. The idea behind OASIS HUB was to create an open, transparent, data platform that would inevitably help provide environmental, climate change and catastrophe risk information to business and wider society, whilst providing everyone with a platform that encourages collaboration and crossover around data and services. Further, OASIS has profound expertise in DRR&CCA innovation projects with a particular focus on stakeholder engagement, communication, dissemination and exploitation. In our consortium OASIS will lead work package 6 on Dissemination&Communication&Exploitation and Impacts.

Stockholm Environment Institute Oxford Office limited (SEI) is an international non-profit research and policy organization based in Oxford (UK). SEI's work focuses on bridging science and policy on climate-related issues and sustainable development with the aim to inform effective adaptation to climate change, and climate-related governance and policy-making. SEI features landmark developments regarding co-production processes with stakeholders (TANDEM) and the Connectivity HUB which aims to help the CCA and DRR communities to work together. This interactive "search and discovery" hub allows people in these fields to find potential synergies, to better communicate with one another, and to learn about which organisations are working on what issues. In the DIRECTED project SEI will lead work package 4 on Co-production.

Eidgenoessische Technische Hochschule Zuerich (ETH), Department of Environmental Systems, Weather and Climate Risks Group is an internationally leading research group on climate risk assessment and economics of climate adaptation. ETH is based in Zurich (Switzerland) and will contribute particularly to work-package 2 on data and model interoperability. With the open source climate risk modelling tool CLIMADA, ETH provides key knowledge about multi-hazard multi-risk modelling using open data sources.

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**Attachment 7: Copy of the Articles 9, 11 – 14, 17 – 20 and 25 and the  
Annex 1 of the Grant Agreement**

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- settlement of internal disputes
- liability, indemnification and confidentiality arrangements between the beneficiaries.

The internal arrangements must not contain any provision contrary to this Agreement.

## ARTICLE 8 — AFFILIATED ENTITIES

Not applicable

## ARTICLE 9 — OTHER PARTICIPANTS INVOLVED IN THE ACTION

### 9.1 Associated partners

The following entities which cooperate with a beneficiary will participate in the action as ‘associated partners’:

- **EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH (ETH)**, PIC 999979015
- **OASIS HUB LIMITED (OASIS)**, PIC 906361308
- **SEI OXFORD OFFICE LIMITED (SEI)**, PIC 998830535

Associated partners must implement the action tasks attributed to them in Annex 1 in accordance with Article 11. They may not charge costs or contributions to the action and the costs for their tasks are not eligible.

The tasks must be set out in Annex 1.

The beneficiaries must ensure that their contractual obligations under Articles 11 (proper implementation), 12 (conflict of interests), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the associated partners.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the associated partners.

### 9.2 Third parties giving in-kind contributions to the action

Other third parties may give in-kind contributions to the action (i.e. personnel, equipment, other goods, works and services, etc. which are free-of-charge) if necessary for the implementation.

Third parties giving in-kind contributions do not implement any action tasks. They may not charge costs or contributions to the action, but the costs for the in-kind contributions are eligible and may be charged by the beneficiaries which use them, under the conditions set out in Article 6. The costs will be included in Annex 2 as part of the beneficiaries’ costs.

The third parties and their in-kind contributions should be set out in Annex 1.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF,



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Court of Auditors (ECA), etc.) can exercise their rights also towards the third parties giving in-kind contributions.

### 9.3 Subcontractors

Subcontractors may participate in the action, if necessary for the implementation.

Subcontractors must implement their action tasks in accordance with Article 11. The costs for the subcontracted tasks (invoiced price from the subcontractor) are eligible and may be charged by the beneficiaries, under the conditions set out in Article 6. The costs will be included in Annex 2 as part of the beneficiaries' costs.

The beneficiaries must ensure that their contractual obligations under Articles 11 (proper implementation), 12 (conflict of interest), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the subcontractors.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the subcontractors.

### 9.4 Recipients of financial support to third parties

If the action includes providing financial support to third parties (e.g. grants, prizes or similar forms of support), the beneficiaries must ensure that their contractual obligations under Articles 12 (conflict of interest), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the third parties receiving the support (recipients).

The beneficiaries must also ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the recipients.

## ARTICLE 10 — PARTICIPANTS WITH SPECIAL STATUS

### 10.1 Non-EU participants

Participants which are established in a non-EU country (if any) undertake to comply with their obligations under the Agreement and:

- to respect general principles (including fundamental rights, values and ethical principles, environmental and labour standards, rules on classified information, intellectual property rights, visibility of funding and protection of personal data)
- for the submission of certificates under Article 24: to use qualified external auditors which are independent and comply with comparable standards as those set out in EU Directive 2006/43/EC<sup>14</sup>
- for the controls under Article 25: to allow for checks, reviews, audits and investigations

<sup>14</sup> Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts or similar national regulations (OJ L 157, 9.6.2006, p. 87).

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- security and ethics (Articles 13, 14)
- IPR (including background and results, access rights and rights of use), communication, dissemination and visibility (Articles 16 and 17)
- information obligation (Article 19)
- payment, reporting and amendments (Articles 21, 22 and 39)
- rejections, reductions, suspensions and terminations (Articles 27, 28, 29-32)

If the pillar assessment was subject to remedial measures, reliance on the internal systems, rules and procedures is subject to compliance with those remedial measures.

Participants whose assessment has not yet been updated to cover (the new rules on) data protection may rely on their internal systems, rules and procedures, provided that they ensure that personal data is:

- processed lawfully, fairly and in a transparent manner in relation to the data subject
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the personal data.

Participants must inform the coordinator without delay of any changes to the systems, rules and procedures that were part of the pillar assessment. The coordinator must immediately inform the granting authority.

Pillar-assessed participants that have also concluded a framework agreement with the EU, may moreover — under the same conditions as those above (i.e. not call into question the decision awarding the grant or breach the principle of equal treatment of applicants or beneficiaries) — rely on the provisions set out in that framework agreement.

## **SECTION 2 RULES FOR CARRYING OUT THE ACTION**

### **ARTICLE 11 — PROPER IMPLEMENTATION OF THE ACTION**

#### **11.1 Obligation to properly implement the action**

The beneficiaries must implement the action as described in Annex 1 and in compliance with the provisions of the Agreement, the call conditions and all legal obligations under applicable EU, international and national law.

#### **11.2 Consequences of non-compliance**

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If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 12 — CONFLICT OF INTERESTS**

### **12.1 Conflict of interests**

The beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the Agreement could be compromised for reasons involving family, emotional life, political or national affinity, economic interest or any other direct or indirect interest ('conflict of interests').

They must formally notify the granting authority without delay of any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The granting authority may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

### **12.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28) and the grant or the beneficiary may be terminated (see Article 32).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 13 — CONFIDENTIALITY AND SECURITY**

### **13.1 Sensitive information**

The parties must keep confidential any data, documents or other material (in any form) that is identified as sensitive in writing ('sensitive information') — during the implementation of the action and for at least until the time-limit set out in the Data Sheet (see Point 6).

If a beneficiary requests, the granting authority may agree to keep such information confidential for a longer period.

Unless otherwise agreed between the parties, they may use sensitive information only to implement the Agreement.

The beneficiaries may disclose sensitive information to their personnel or other participants involved in the action only if they:

- (a) need to know it in order to implement the Agreement and
- (b) are bound by an obligation of confidentiality.

The granting authority may disclose sensitive information to its staff and to other EU institutions and bodies.

It may moreover disclose sensitive information to third parties, if:

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- (a) this is necessary to implement the Agreement or safeguard the EU financial interests and
- (b) the recipients of the information are bound by an obligation of confidentiality.

The confidentiality obligations no longer apply if:

- (a) the disclosing party agrees to release the other party
- (b) the information becomes publicly available, without breaching any confidentiality obligation
- (c) the disclosure of the sensitive information is required by EU, international or national law.

Specific confidentiality rules (if any) are set out in Annex 5.

### **13.2 Classified information**

The parties must handle classified information in accordance with the applicable EU, international or national law on classified information (in particular, Decision 2015/444<sup>15</sup> and its implementing rules).

Deliverables which contain classified information must be submitted according to special procedures agreed with the granting authority.

Action tasks involving classified information may be subcontracted only after explicit approval (in writing) from the granting authority.

Classified information may not be disclosed to any third party (including participants involved in the action implementation) without prior explicit written approval from the granting authority.

Specific security rules (if any) are set out in Annex 5.

### **13.3 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 14 — ETHICS AND VALUES**

### **14.1 Ethics**

The action must be carried out in line with the highest ethical standards and the applicable EU, international and national law on ethical principles.

Specific ethics rules (if any) are set out in Annex 5.

### **14.2 Values**

The beneficiaries must commit to and ensure the respect of basic EU values (such as respect for

<sup>15</sup> Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).

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human dignity, freedom, democracy, equality, the rule of law and human rights, including the rights of minorities).

Specific rules on values (if any) are set out in Annex 5.

### **14.3 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 15 — DATA PROTECTION**

### **15.1 Data processing by the granting authority**

Any personal data under the Agreement will be processed under the responsibility of the data controller of the granting authority in accordance with and for the purposes set out in the Portal Privacy Statement.

For grants where the granting authority is the European Commission, an EU regulatory or executive agency, joint undertaking or other EU body, the processing will be subject to Regulation 2018/1725<sup>16</sup>.

### **15.2 Data processing by the beneficiaries**

The beneficiaries must process personal data under the Agreement in compliance with the applicable EU, international and national law on data protection (in particular, Regulation 2016/679<sup>17</sup>).

They must ensure that personal data is:

- processed lawfully, fairly and in a transparent manner in relation to the data subjects
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the data.

<sup>16</sup> Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

<sup>17</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC ('GDPR') (OJ L 119, 4.5.2016, p. 1).

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## ARTICLE 17 — COMMUNICATION, DISSEMINATION AND VISIBILITY

### 17.1 Communication — Dissemination — Promoting the action

Unless otherwise agreed with the granting authority, the beneficiaries must promote the action and its results by providing targeted information to multiple audiences (including the media and the public), in accordance with Annex 1 and in a strategic, coherent and effective manner.

Before engaging in a communication or dissemination activity expected to have a major media impact, the beneficiaries must inform the granting authority.

### 17.2 Visibility — European flag and funding statement

Unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) and funding statement (translated into local languages, where appropriate):



Funded by the  
European Union



Co-funded by the  
European Union



Funded by the  
European Union



Co-funded by the  
European Union

The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text.

Apart from the emblem, no other visual identity or logo may be used to highlight the EU support.

When displayed in association with other logos (e.g. of beneficiaries or sponsors), the emblem must be displayed at least as prominently and visibly as the other logos.

For the purposes of their obligations under this Article, the beneficiaries may use the emblem without first obtaining approval from the granting authority. This does not, however, give them the right to

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exclusive use. Moreover, they may not appropriate the emblem or any similar trademark or logo, either by registration or by any other means.

### **17.3 Quality of information — Disclaimer**

Any communication or dissemination activity related to the action must use factually accurate information.

Moreover, it must indicate the following disclaimer (translated into local languages where appropriate):

“Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or [name of the granting authority]. Neither the European Union nor the granting authority can be held responsible for them.”

### **17.4 Specific communication, dissemination and visibility rules**

Specific communication, dissemination and visibility rules (if any) are set out in Annex 5.

### **17.5 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 18 — SPECIFIC RULES FOR CARRYING OUT THE ACTION**

### **18.1 Specific rules for carrying out the action**

Specific rules for implementing the action (if any) are set out in Annex 5.

### **18.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such a breach may also lead to other measures described in Chapter 5.

## **SECTION 3 GRANT ADMINISTRATION**

### **ARTICLE 19 — GENERAL INFORMATION OBLIGATIONS**

#### **19.1 Information requests**

The beneficiaries must provide — during the action or afterwards and in accordance with Article 7 — any information requested in order to verify eligibility of the costs or contributions declared, proper implementation of the action and compliance with the other obligations under the Agreement.

The information provided must be accurate, precise and complete and in the format requested, including electronic format.

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## 19.2 Participant Register data updates

The beneficiaries must keep — at all times, during the action or afterwards — their information stored in the Portal Participant Register up to date, in particular, their name, address, legal representatives, legal form and organisation type.

## 19.3 Information about events and circumstances which impact the action

The beneficiaries must immediately inform the granting authority (and the other beneficiaries) of any of the following:

- (a) **events** which are likely to affect or delay the implementation of the action or affect the EU's financial interests, in particular:
  - (i) changes in their legal, financial, technical, organisational or ownership situation (including changes linked to one of the exclusion grounds listed in the declaration of honour signed before grant signature)
  - (ii) linked action information: not applicable
- (b) **circumstances** affecting:
  - (i) the decision to award the grant or
  - (ii) compliance with requirements under the Agreement.

## 19.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## ARTICLE 20 — RECORD-KEEPING

### 20.1 Keeping records and supporting documents

The beneficiaries must — at least until the time-limit set out in the Data Sheet (see Point 6) — keep records and other supporting documents to prove the proper implementation of the action in line with the accepted standards in the respective field (if any).

In addition, the beneficiaries must — for the same period — keep the following to justify the amounts declared:

- (a) for actual costs: adequate records and supporting documents to prove the costs declared (such as contracts, subcontracts, invoices and accounting records); in addition, the beneficiaries' usual accounting and internal control procedures must enable direct reconciliation between the amounts declared, the amounts recorded in their accounts and the amounts stated in the supporting documents
- (b) for flat-rate costs and contributions (if any): adequate records and supporting documents to prove the eligibility of the costs or contributions to which the flat-rate is applied



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- (c) for the following simplified costs and contributions: the beneficiaries do not need to keep specific records on the actual costs incurred, but must keep:
- (i) for unit costs and contributions (if any): adequate records and supporting documents to prove the number of units declared
  - (ii) for lump sum costs and contributions (if any): adequate records and supporting documents to prove proper implementation of the work as described in Annex 1
  - (iii) for financing not linked to costs (if any): adequate records and supporting documents to prove the achievement of the results or the fulfilment of the conditions as described in Annex 1
- (d) for unit, flat-rate and lump sum costs and contributions according to usual cost accounting practices (if any): the beneficiaries must keep any adequate records and supporting documents to prove that their cost accounting practices have been applied in a consistent manner, based on objective criteria, regardless of the source of funding, and that they comply with the eligibility conditions set out in Articles 6.1 and 6.2.

Moreover, the following is needed for specific budget categories:

- (e) for personnel costs: time worked for the beneficiary under the action must be supported by declarations signed monthly by the person and their supervisor, unless another reliable time-record system is in place; the granting authority may accept alternative evidence supporting the time worked for the action declared, if it considers that it offers an adequate level of assurance
- (f) additional record-keeping rules: not applicable

The records and supporting documents must be made available upon request (see Article 19) or in the context of checks, reviews, audits or investigations (see Article 25).

If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement (including the extension of findings; see Article 25), the beneficiaries must keep these records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. The granting authority may accept non-original documents if they offer a comparable level of assurance.

## **20.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, costs or contributions insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 27), and the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 21 — REPORTING**

### **21.1 Continuous reporting**

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## EUROPEAN RESEARCH EXECUTIVE AGENCY (REA)

REA.C – Future Society  
C.2 – Secure Society

### GRANT AGREEMENT

#### **Project 101073978 — DIRECTED**

#### **PREAMBLE**

This **Agreement** ('the Agreement') is **between** the following parties:

**on the one part,**

the **European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and**

**on the other part,**

1. 'the coordinator':

**TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS)**, PIC 999861257, established in UNIVERSITAETSPLATZ 2, BRAUNSCHWEIG 38106, Germany,

and the following other beneficiaries, if they sign their 'accession form' (see Annex 3 and Article 40):

2. **POTSDAM-INSTITUT FUR KLIMAFOLGENFORSCHUNG EV (PIK)**, PIC 999464042, established in TELEGRAFENBERG A31, POTSDAM 14412, Germany,

3. **DANMARKS TEKNISKE UNIVERSITET (DTU)**, PIC 999990655, established in ANKER ENGELUNDSVEJ 1 BYGNING 101 A, KGS LYNGBY 2800, Denmark,

4. **GECOSISTEMA SRL (GECO)**, PIC 959248327, established in PIAZZA MALATESTA 21, RIMINI RN 47900, Italy,

5. **INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES EV (IASS)**, PIC 960542404, established in BERLINER STRASSE 130, POSTDAM 14467, Germany,

6. **UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK (UCC)**, PIC 999975717, established in WESTERN ROAD, CORK T12 YN60, Ireland,

7. **REGION HOVEDSTADEN (REGIONH)**, PIC 999654744, established in KONGENS VAENGE 2, HILLEROD 3400, Denmark,

8. **AGENZIA REGIONALE PER LA SICUREZZATERRITORIALE E LA PROTEZIONE CIVILE (ARSTPC-ER)**, PIC 998349803, established in VIALE SILVANI 6, BOLOGNA 40122, Italy,

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9. **GENILLARD & CO GMBH (G&C)**, PIC 920168870, established in ISMANINGER STRASSE 102, MUNCHEN 81675, Germany,

10. **INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE (IIASA)**, PIC 999452596, established in Schlossplatz 1, LAXENBURG 2361, Austria,

11. **ERFTVERBAND (EV)**, PIC 939668974, established in AM ERFTVERBAND 6, BERGHEIM 50126, Germany,

12. **ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET (ZSRT)**, PIC 888552981, established in EPITOK UTJA 5 3//9, ZALAEGERSZEG 8900, Hungary,

13. **AGENZIA REGIONALE PER LA PREVENZIONE, L'AMBIENTE E L'ENERGIA DELL'EMILIA-ROMAGNA (ARPAE)**, PIC 999454633, established in VIA PO 5, BOLOGNA 40139, Italy,

14. **HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ (GFZ)**, PIC 999994341, established in TELEGRAFENBERG 17, POTSDAM 14473, Germany,

15. **52 NORTH SPATIAL INFORMATION RESEARCH GMBH (52N)**, PIC 997237407, established in MARTIN LUTHER KING WEG 24, MUNSTER 48155, Germany,

Unless otherwise specified, references to ‘beneficiary’ or ‘beneficiaries’ include the coordinator and affiliated entities (if any).

If only one beneficiary signs the grant agreement (‘mono-beneficiary grant’), all provisions referring to the ‘coordinator’ or the ‘beneficiaries’ will be considered — mutatis mutandis — as referring to the beneficiary.

The parties referred to above have agreed to enter into the Agreement.

By signing the Agreement and the accession forms, the beneficiaries accept the grant and agree to implement the action under their own responsibility and in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

The Agreement is composed of:

Preamble

Terms and Conditions (including Data Sheet)

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- Annex 1 Description of the action<sup>1</sup>
- Annex 2 Estimated budget for the action
- Annex 2a Additional information on unit costs and contributions (if applicable)
- Annex 3 Accession forms (if applicable)<sup>2</sup>
- Annex 3a Declaration on joint and several liability of affiliated entities (if applicable)<sup>3</sup>
- Annex 4 Model for the financial statements
- Annex 5 Specific rules (if applicable)

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<sup>1</sup> Template published on [Portal Reference Documents](#).

<sup>2</sup> Template published on [Portal Reference Documents](#).

<sup>3</sup> Template published on [Portal Reference Documents](#).

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## **TERMS AND CONDITIONS**

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## **DATA SHEET**

### **1. General data**

Project summary:

Project summary
<p>The recent droughts in central Europe and unprecedented floods in central Europe have disclosed our vulnerability to extreme weather events. Besides climate change as a driver of more frequent and intensifying weather extremes, demographic change and socio-economic development exacerbate severe impacts. International frameworks for disaster risk reduction and climate change adaptation (e.g. SENDAI framework, EU Strategy on adaptation to climate change) acknowledge the critical need for integrating risk governance, communication and operational mechanisms for coping with extreme climate events throughout the entire Disaster Risk Management cycle. DIRECTED aspires to foster disaster-resilient European societies by expanding our capabilities to communicate, utilise and exchange state-of-the-art data, information and knowledge between different actors; boosting the integration, accessibility and interoperability of models; facilitating knowledge sharing; improving dialogue and cooperation encompassing all levels of actors based on enhanced community engagement and developing new governance and risk management strategies using a bottom-up, value-driven co-development approach. Key to supporting interoperability will be the establishment of the DATA-FABRIC, an innovative, governed, cloud platform that enables secure, flexible, discovery and sharing of all structured and unstructured data. Central to DIRECTED are four Real World Labs that co-develop new governance, interoperability and knowledge production frameworks and demonstrate their benefits for enhanced disaster risk governance supported by innovative technical frameworks to access, transform and integrate data and models into customised workflows for creating actionable solutions. The Real World Labs ensure the project continuously and actively involves key stakeholders in the co-development process and address topical problems of multi-hazard risk management and climate change adaptation to maximise impacts.</p>

Keywords:

- Disaster resilience and crisis management
- Communication
- Ensure Communication and alerts
- Protection of citizens (goods and people)
- Web and information systems, database systems, information retrieval and digital libraries, data fusion

Project number: 101073978

Project name: Disaster Resilience for Extreme Climate Events providing interoperable Data, models, communication and governance

Project acronym: DIRECTED

Call: HORIZON-CL3-2021-DRS-01

Topic: HORIZON-CL3-2021-DRS-01-02

Type of action: HORIZON Innovation Actions

Granting authority: European Research Executive Agency

Grant managed through EU Funding & Tenders Portal: Yes (eGrants)

Project starting date: fixed date: 1 October 2022

Project end date: 30 September 2026

Project duration: 48 months

Consortium agreement: Yes

### **2. Participants**

**List of participants:**

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N°	Role	Short name	Legal name	Ctry	PIC	Total eligible costs (BEN and AE)	Max grant amount
1	COO	TUBS	TECHNISCHE UNIVERSITAET BRAUNSCHWEIG	DE	999861257	747 238.75	747 238.75
2	BEN	PIK	POTSDAM-INSTITUT FUR KLIMAFOLGENFORSCHUNG EV	DE	999464042	408 750.00	408 750.00
3	BEN	DTU	DANMARKS TEKNISKE UNIVERSITET	DK	999990655	523 750.00	523 750.00
4	BEN	GECO	GECOSISTEMA SRL	IT	959248327	558 750.00	391 125.00
5	BEN	IASS	INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES EV	DE	960542404	415 000.00	415 000.00
6	BEN	UCC	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE	999975717	526 250.00	526 250.00
7	BEN	REGIONH	REGION HOVEDSTADEN	DK	999654744	247 500.00	247 500.00
8	BEN	ARSTPC-ER	AGENZIA REGIONALE PER LA SICUREZZATERRITORIALE E LA PROTEZIONE CIVILE	IT	998349803	97 750.00	97 750.00
9	BEN	G&C	GENILLARD & CO GMBH	DE	920168870	203 750.00	142 625.00
10	BEN	IIASA	INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE	AT	999452596	258 750.00	258 750.00
11	BEN	EV	ERFTVERBAND	DE	939668974	348 000.00	348 000.00
12	BEN	ZSRT	ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET	HU	888552981	112 500.00	112 500.00
13	BEN	ARPAE	AGENZIA REGIONALE PER LA PREVENZIONE, L'AMBIENTE E L'ENERGIA DELL'EMILIA-ROMAGNA	IT	999454633	53 750.00	53 750.00
14	BEN	GFZ	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ	DE	999994341	330 236.25	330 236.24
15	BEN	52N	52 NORTH SPATIAL INFORMATION RESEARCH GMBH	DE	997237407	451 375.00	451 375.00
16	AP	ETH	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH	999979015	0.00	0.00
17	AP	OASIS	OASIS HUB LIMITED	UK	906361308	0.00	0.00
18	AP	SEI	SEI OXFORD OFFICE LIMITED	UK	998830535	0.00	0.00
<b>Total</b>						5 283 350.00	5 054 599.99

**Coordinator:**

- TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS)

**3. Grant****Maximum grant amount, total estimated eligible costs and contributions and funding rate:**

Total eligible costs (BEN and AE)	Funding rate (%)	Maximum grant amount (Annex 2)	Maximum grant amount (award decision)
5 283 350.00	100, 70	5 054 599.99	5 054 599.99

**Grant form:** Budget-based**Grant mode:** Action grant**Budget categories/activity types:**

- A. Personnel costs
  - A.1 Employees, A.2 Natural persons under direct contract, A.3 Seconded persons
  - A.4 SME owners and natural person beneficiaries
- B. Subcontracting costs

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- C. Purchase costs
  - C.1 Travel and subsistence
  - C.2 Equipment
  - C.3 Other goods, works and services
- D. Other cost categories
  - D.2 Internally invoiced goods and services
- E. Indirect costs

**Cost eligibility options:**

- In-kind contributions eligible costs
- Parental leave
- Project-based supplementary payments
- Average personnel costs (unit cost according to usual cost accounting practices)
- Limitation for subcontracting
- Travel and subsistence:
  - Travel: Actual costs
  - Accommodation: Actual costs
  - Subsistence: Actual costs
- Equipment: depreciation only
- Indirect cost flat-rate: 25% of the eligible direct costs (categories A-D, except volunteers costs, subcontracting costs, financial support to third parties and exempted specific cost categories, if any)
- VAT: Yes
- Other ineligible costs

**Budget flexibility:** Yes (no flexibility cap)**4. Reporting, payments and recoveries****4.1 Continuous reporting** (art 21)**Deliverables:** see Funding & Tenders Portal Continuous Reporting tool**4.2 Periodic reporting and payments****Reporting and payment schedule** (art 21, 22):

Reporting					Payments	
Reporting periods			Type	Deadline	Type	Deadline (time to pay)
RP No	Month from	Month to				
					Initial prefinancing	30 days from entry into force/10 days before starting date – whichever is the latest

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Reporting					Payments	
Reporting periods			Type	Deadline	Type	Deadline (time to pay)
RP No	Month from	Month to				
1	1	16	Periodic report	60 days after end of reporting period	Interim payment	90 days from receiving periodic report
2	17	32	Periodic report	60 days after end of reporting period	Interim payment	90 days from receiving periodic report
3	33	48	Periodic report	60 days after end of reporting period	Final payment	90 days from receiving periodic report

**Prefinancing payments and guarantees:**

Prefinancing payment	
Type	Amount
Prefinancing 1 (initial)	2 695 618.17

**Reporting and payment modalities (art 21, 22):**

Mutual Insurance Mechanism (MIM): Yes

MIM contribution: 5% of the maximum grant amount (252 730.00), retained from the initial prefinancing

Restrictions on distribution of initial prefinancing: The prefinancing may be distributed only if the minimum number of beneficiaries set out in the call conditions (if any) have acceded to the Agreement and only to beneficiaries that have acceded.

Interim payment ceiling (if any): 90% of the maximum grant amount

Exception for revenues: Yes

No-profit rule: Yes

Late payment interest: ECB + 3.5%

Bank account for payments:

DE7925050000001999200

Conversion into euros: Double conversion

Reporting language: Language of the Agreement

**4.3 Certificates (art 24):**

Certificates on the financial statements (CFS):

Conditions:

Schedule: only at final payment, if threshold is reached

Standard threshold (beneficiary-level):

- financial statement: requested EU contribution to costs  $\geq$  EUR 430 000.00

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Special threshold for beneficiaries with a systems and process audit(see Article 24): financial statement: requested EU contribution to costs  $\geq$  EUR 725 000.00

#### **4.4 Recoveries** (art 22)

##### **First-line liability for recoveries:**

Beneficiary termination: Beneficiary concerned

Final payment: Each beneficiary for their own debt

After final payment: Beneficiary concerned

##### **Joint and several liability for enforced recoveries (in case of non-payment):**

Individual financial responsibility: Each beneficiary is liable only for its own debts (and those of its affiliated entities, if any)

#### **5. Consequences of non-compliance, applicable law & dispute settlement forum**

##### **Suspension and termination:**

Additional suspension grounds (art 31)

Additional termination grounds (art 32)

##### **Applicable law** (art 43):

Standard applicable law regime: EU law + law of Belgium

##### **Dispute settlement forum** (art 43):

Standard dispute settlement forum:

EU beneficiaries: EU General Court + EU Court of Justice (on appeal)

Non-EU beneficiaries: Courts of Brussels, Belgium (unless an international agreement provides for the enforceability of EU court judgements)

#### **6. Other**

**Specific rules (Annex 5):** Yes

##### **Standard time-limits after project end:**

Confidentiality (for X years after final payment): 5

Record-keeping (for X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Reviews (up to X years after final payment): 2

Audits (up to X years after final payment): 2

Extension of findings from other grants to this grant (no later than X years after final payment): 2

Impact evaluation (up to X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

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## **CHAPTER 1 GENERAL**

### **ARTICLE 1 — SUBJECT OF THE AGREEMENT**

This Agreement sets out the rights and obligations and terms and conditions applicable to the grant awarded for the implementation of the action set out in Chapter 2.

### **ARTICLE 2 — DEFINITIONS**

For the purpose of this Agreement, the following definitions apply:

**Actions** — The project which is being funded in the context of this Agreement.

**Grant** — The grant awarded in the context of this Agreement.

**EU grants** — Grants awarded by EU institutions, bodies, offices or agencies (including EU executive agencies, EU regulatory agencies, EDA, joint undertakings, etc.).

**Participants** — Entities participating in the action as beneficiaries, affiliated entities, associated partners, third parties giving in-kind contributions, subcontractors or recipients of financial support to third parties.

**Beneficiaries (BEN)** — The signatories of this Agreement (either directly or through an accession form).

**Affiliated entities (AE)** — Entities affiliated to a beneficiary within the meaning of Article 187 of EU Financial Regulation 2018/1046<sup>4</sup> which participate in the action with similar rights and obligations as the beneficiaries (obligation to implement action tasks and right to charge costs and claim contributions).

**Associated partners (AP)** — Entities which participate in the action, but without the right to charge costs or claim contributions.

**Purchases** — Contracts for goods, works or services needed to carry out the action (e.g. equipment, consumables and supplies) but which are not part of the action tasks (see Annex 1).

**Subcontracting** — Contracts for goods, works or services that are part of the action tasks (see Annex 1).

**In-kind contributions** — In-kind contributions within the meaning of Article 2(36) of EU Financial

<sup>4</sup> For the definition, see Article 187 Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 ('EU Financial Regulation') (OJ L 193, 30.7.2018, p. 1): "**affiliated entities** [are]:

- (a) entities that form a sole beneficiary [(i.e. where an entity is formed of several entities that satisfy the criteria for being awarded a grant, including where the entity is specifically established for the purpose of implementing an action to be financed by a grant)];
- (b) entities that satisfy the eligibility criteria and that do not fall within one of the situations referred to in Article 136(1) and 141(1) and that have a link with the beneficiary, in particular a legal or capital link, which is neither limited to the action nor established for the sole purpose of its implementation".

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Regulation 2018/1046, i.e. non-financial resources made available free of charge by third parties.

**Fraud** — Fraud within the meaning of Article 3 of EU Directive 2017/1371<sup>5</sup> and Article 1 of the Convention on the protection of the European Communities' financial interests, drawn up by the Council Act of 26 July 1995<sup>6</sup>, as well as any other wrongful or criminal deception intended to result in financial or personal gain.

**Irregularities** — Any type of breach (regulatory or contractual) which could impact the EU financial interests, including irregularities within the meaning of Article 1(2) of EU Regulation 2988/95<sup>7</sup>.

**Grave professional misconduct** — Any type of unacceptable or improper behaviour in exercising one's profession, especially by employees, including grave professional misconduct within the meaning of Article 136(1)(c) of EU Financial Regulation 2018/1046.

**Applicable EU, international and national law** — Any legal acts or other (binding or non-binding) rules and guidance in the area concerned.

**Portal** — EU Funding & Tenders Portal; electronic portal and exchange system managed by the European Commission and used by itself and other EU institutions, bodies, offices or agencies for the management of their funding programmes (grants, procurements, prizes, etc.).

## **CHAPTER 2 ACTION**

### **ARTICLE 3 — ACTION**

The grant is awarded for the action **101073978 — DIRECTED** ('action'), as described in Annex 1.

### **ARTICLE 4 — DURATION AND STARTING DATE**

The duration and the starting date of the action are set out in the Data Sheet (see Point 1).

## **CHAPTER 3 GRANT**

### **ARTICLE 5 — GRANT**

#### **5.1 Form of grant**

The grant is an action grant<sup>8</sup> which takes the form of a budget-based mixed actual cost grant (i.e. a

<sup>5</sup> Directive (EU) 2017/1371 of the European Parliament and of the Council of 5 July 2017 on the fight against fraud to the Union's financial interests by means of criminal law (OJ L 198, 28.7.2017, p. 29).

<sup>6</sup> OJ C 316, 27.11.1995, p. 48.

<sup>7</sup> Council Regulation (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests (OJ L 312, 23.12.1995, p. 1).

<sup>8</sup> For the definition, see Article 180(2)(a) EU Financial Regulation 2018/1046: '**action grant**' means an EU grant to finance "an action intended to help achieve a Union policy objective".



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grant based on actual costs incurred, but which may also include other forms of funding, such as unit costs or contributions, flat-rate costs or contributions, lump sum costs or contributions or financing not linked to costs).

## 5.2 Maximum grant amount

The maximum grant amount is set out in the Data Sheet (see Point 3) and in the estimated budget (Annex 2).

## 5.3 Funding rate

The funding rate for costs is 100% of the eligible costs for beneficiaries that are non-profit legal entities<sup>9</sup> and 70% of the eligible costs for beneficiaries that are profit legal entities.

Contributions are not subject to any funding rate.

## 5.4 Estimated budget, budget categories and forms of funding

The estimated budget for the action is set out in Annex 2.

It contains the estimated eligible costs and contributions for the action, broken down by participant and budget category.

Annex 2 also shows the types of costs and contributions (forms of funding)<sup>10</sup> to be used for each budget category.

If unit costs or contributions are used, the details on the calculation will be explained in Annex 2a.

## 5.5 Budget flexibility

The budget breakdown may be adjusted — without an amendment (see Article 39) — by transfers (between participants and budget categories), as long as this does not imply any substantive or important change to the description of the action in Annex 1.

However:

- changes to the budget category for volunteers (if used) always require an amendment
- changes to budget categories with lump sums costs or contributions (if used; including financing not linked to costs) always require an amendment
- changes to budget categories with higher funding rates or budget ceilings (if used) always require an amendment
- addition of amounts for subcontracts not provided for in Annex 1 either require an amendment or simplified approval in accordance with Article 6.2

<sup>9</sup> For the definition, see Article XX of the Horizon Europe Framework Programme and Rules for Participation Regulation (EU) XXX: ‘**non-profit legal entity**’ means a legal entity which by its legal form is non-profit-making or which has a legal or statutory obligation not to distribute profits to its shareholders or individual members.

<sup>10</sup> See Article 125 EU Financial Regulation 2018/1046.

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- other changes require an amendment or simplified approval, if specifically provided for in Article 6.2
- flexibility caps: not applicable.

## ARTICLE 6 — ELIGIBLE AND INELIGIBLE COSTS AND CONTRIBUTIONS

In order to be eligible, costs and contributions must meet the **eligibility** conditions set out in this Article.

### 6.1 General eligibility conditions

The **general eligibility conditions** are the following:

- (a) for actual costs:
  - (i) they must be actually incurred by the beneficiary
  - (ii) they must be incurred in the period set out in Article 4 (with the exception of costs relating to the submission of the final periodic report, which may be incurred afterwards; see Article 21)
  - (iii) they must be declared under one of the budget categories set out in Article 6.2 and Annex 2
  - (iv) they must be incurred in connection with the action as described in Annex 1 and necessary for its implementation
  - (v) they must be identifiable and verifiable, in particular recorded in the beneficiary's accounts in accordance with the accounting standards applicable in the country where the beneficiary is established and with the beneficiary's usual cost accounting practices
  - (vi) they must comply with the applicable national law on taxes, labour and social security and
  - (vii) they must be reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency
- (b) for unit costs or contributions (if any):
  - (i) they must be declared under one of the budget categories set out in Article 6.2 and Annex 2
  - (ii) the units must:
    - be actually used or produced by the beneficiary in the period set out in Article 4 (with the exception of units relating to the submission of the final periodic report, which may be used or produced afterwards; see Article 21)
    - be necessary for the implementation of the action and
  - (iii) the number of units must be identifiable and verifiable, in particular supported by records and documentation (see Article 20)

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- (c) for flat-rate costs or contributions (if any):
- (i) they must be declared under one of the budget categories set out in Article 6.2 and Annex 2
  - (ii) the costs or contributions to which the flat-rate is applied must:
    - be eligible
    - relate to the period set out in Article 4 (with the exception of costs or contributions relating to the submission of the final periodic report, which may be incurred afterwards; see Article 21)
- (d) for lump sum costs or contributions (if any):
- (i) they must be declared under one of the budget categories set out in Article 6.2 and Annex 2
  - (ii) the work must be properly implemented by the beneficiary in accordance with Annex 1
  - (iii) the deliverables/outputs must be achieved in the period set out in Article 4 (with the exception of deliverables/outputs relating to the submission of the final periodic report, which may be achieved afterwards; see Article 21)
- (e) for unit, flat-rate or lump sum costs or contributions according to usual cost accounting practices (if any):
- (i) they must fulfil the general eligibility conditions for the type of cost concerned
  - (ii) the cost accounting practices must be applied in a consistent manner, based on objective criteria, regardless of the source of funding
- (f) for financing not linked to costs (if any): the results must be achieved or the conditions must be fulfilled as described in Annex 1.

In addition, for direct cost categories (e.g. personnel, travel & subsistence, subcontracting and other direct costs) only costs that are directly linked to the action implementation and can therefore be attributed to it directly are eligible. They must not include any indirect costs (i.e. costs that are only indirectly linked to the action, e.g. via cost drivers).

**In-kind contributions** provided by third parties free of charge may be declared as eligible direct costs by the beneficiaries which use them (under the same conditions as if they were their own, provided that they concern only direct costs and that the third parties and their in-kind contributions are set out in Annex 1 (or approved ex post in the periodic report, if their use does not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants; ‘simplified approval procedure’).

## 6.2 Specific eligibility conditions for each budget category

For each budget category, the **specific eligibility conditions** are as follows:

### Direct costs

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## A. Personnel costs

**A.1 Costs for employees (or equivalent)** are eligible as personnel costs if they fulfil the general eligibility conditions and are related to personnel working for the beneficiary under an employment contract (or equivalent appointing act) and assigned to the action.

They must be limited to salaries (including net payments during parental leave), social security contributions, taxes and other costs linked to the remuneration, if they arise from national law or the employment contract (or equivalent appointing act) and be calculated on the basis of the costs actually incurred, in accordance with the following method:

{daily rate for the person  
multiplied by  
number of day-equivalents worked on the action (rounded up or down to the nearest half-day)}.

The daily rate must be calculated as:

{annual personnel costs for the person  
divided by  
215}.

The number of day-equivalents declared for a person must be identifiable and verifiable (see Article 20).

The actual time spent on parental leave by a person assigned to the action may be deducted from the 215 days indicated in the above formula.

The total number of day-equivalents declared in EU grants, for a person for a year, cannot be higher than 215, minus time spent on parental leave (if any).

For personnel which receives supplementary payments for work in projects (project-based remuneration), the personnel costs must be calculated at a rate which:

- corresponds to the actual remuneration costs paid by the beneficiary for the time worked by the person in the action over the reporting period
- does not exceed the remuneration costs paid by the beneficiary for work in similar projects funded by national schemes ('national projects reference')
- is defined based on objective criteria allowing to determine the amount to which the person is entitled

and

- reflects the usual practice of the beneficiary to pay consistently bonuses or supplementary payments for work in projects funded by national schemes.

The national projects reference is the remuneration defined in national law, collective labour agreement or written internal rules of the beneficiary applicable to work in projects funded by national schemes.

If there is no such national law, collective labour agreement or written internal rules or if the project-

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based remuneration is not based on objective criteria, the national project reference will be the average remuneration of the person in the last full calendar year covered by the reporting period, excluding remuneration paid for work in EU actions.

If the beneficiary uses average personnel costs (unit cost according to usual cost accounting practices), the personnel costs must fulfil the general eligibility conditions for such unit costs and the daily rate must be calculated:

- using the actual personnel costs recorded in the beneficiary's accounts and excluding any costs which are ineligible or already included in other budget categories; the actual personnel costs may be adjusted on the basis of budgeted or estimated elements, if they are relevant for calculating the personnel costs, reasonable and correspond to objective and verifiable information

and

- according to usual cost accounting practices which are applied in a consistent manner, based on objective criteria, regardless of the source of funding.

**A.2 and A.3 Costs for natural persons working under a direct contract** other than an employment contract and costs for **seconded persons by a third party against payment** are also eligible as personnel costs, if they are assigned to the action, fulfil the general eligibility conditions and:

- (a) work under conditions similar to those of an employee (in particular regarding the way the work is organised, the tasks that are performed and the premises where they are performed) and
- (b) the result of the work belongs to the beneficiary (unless agreed otherwise).

They must be calculated on the basis of a rate which corresponds to the costs actually incurred for the direct contract or secondment and must not be significantly different from those for personnel performing similar tasks under an employment contract with the beneficiary.

**A.4** The work of **SME owners** for the action (i.e. owners of beneficiaries that are small and medium-sized enterprises<sup>11</sup> not receiving a salary) or **natural person beneficiaries** (i.e. beneficiaries that are natural persons not receiving a salary) may be declared as personnel costs, if they fulfil the general eligibility conditions and are calculated as unit costs in accordance with the method set out in Annex 2a.

## **B. Subcontracting costs**

**Subcontracting costs** for the action (including related duties, taxes and charges, such as non-deductible or non-refundable value added tax (VAT)) are eligible, if they are calculated on the basis

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<sup>11</sup> For the definition, see Commission Recommendation 2003/361/EC: micro, small or medium-sized enterprise (SME) are enterprises

- engaged in an economic activity, irrespective of their legal form (including, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations regularly engaged in an economic activity) and
- employing fewer than 250 persons (expressed in 'annual working units' as defined in Article 5 of the Recommendation) and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.

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of the costs actually incurred, fulfil the general eligibility conditions and are awarded using the beneficiary's usual purchasing practices — provided these ensure subcontracts with best value for money (or if appropriate the lowest price) and that there is no conflict of interests (see Article 12).

Beneficiaries that are 'contracting authorities/entities' within the meaning of the EU Directives on public procurement must also comply with the applicable national law on public procurement.

Subcontracting may cover only a limited part of the action.

The tasks to be subcontracted and the estimated cost for each subcontract must be set out in Annex 1 and the total estimated costs of subcontracting per beneficiary must be set out in Annex 2 (or may be approved ex post in the periodic report, if the use of subcontracting does not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants; 'simplified approval procedure').

### C. Purchase costs

**Purchase costs** for the action (including related duties, taxes and charges, such as non-deductible or non-refundable value added tax (VAT)) are eligible if they fulfil the general eligibility conditions and are bought using the beneficiary's usual purchasing practices — provided these ensure purchases with best value for money (or if appropriate the lowest price) and that there is no conflict of interests (see Article 12).

Beneficiaries that are 'contracting authorities/entities' within the meaning of the EU Directives on public procurement must also comply with the applicable national law on public procurement.

#### C.1 Travel and subsistence

Purchases for **travel, accommodation and subsistence** must be calculated as follows:

- travel: on the basis of the costs actually incurred and in line with the beneficiary's usual practices on travel
- accommodation: on the basis of the costs actually incurred and in line with the beneficiary's usual practices on travel
- subsistence: on the basis of the costs actually incurred and in line with the beneficiary's usual practices on travel .

#### C.2 Equipment

Purchases of **equipment, infrastructure or other assets** used for the action must be declared as depreciation costs, calculated on the basis of the costs actually incurred and written off in accordance with international accounting standards and the beneficiary's usual accounting practices.

Only the portion of the costs that corresponds to the rate of actual use for the action during the action duration can be taken into account.

Costs for **renting or leasing** equipment, infrastructure or other assets are also eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets and do not include any financing fees.

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### C.3 Other goods, works and services

Purchases of **other goods, works and services** must be calculated on the basis of the costs actually incurred.

Such goods, works and services include, for instance, consumables and supplies, promotion, dissemination, protection of results, translations, publications, certificates and financial guarantees, if required under the Agreement.

### D. Other cost categories

#### D.2 Internally invoiced goods and services

**Costs for internally invoiced goods and services** directly used for the action may be declared as unit cost according to usual cost accounting practices, if and as declared eligible in the call conditions, if they fulfil the general eligibility conditions for such unit costs and the amount per unit is calculated:

- using the actual costs for the good or service recorded in the beneficiary's accounts, attributed either by direct measurement or on the basis of cost drivers, and excluding any cost which are ineligible or already included in other budget categories; the actual costs may be adjusted on the basis of budgeted or estimated elements, if they are relevant for calculating the costs, reasonable and correspond to objective and verifiable information

and

- according to usual cost accounting practices which are applied in a consistent manner, based on objective criteria, regardless of the source of funding.

'Internally invoiced goods and services' means goods or services which are provided within the beneficiary's organisation directly for the action and which the beneficiary values on the basis of its usual cost accounting practices.

This cost will not be taken into account for the indirect cost flat-rate.

#### Indirect costs

### E. Indirect costs

**Indirect costs** will be reimbursed at the flat-rate of 25% of the eligible direct costs (categories A-D, except volunteers costs, subcontracting costs, financial support to third parties and exempted specific cost categories, if any).

#### Contributions

Not applicable

### 6.3 Ineligible costs and contributions

The following costs or contributions are **ineligible**:

- (a) costs or contributions that do not comply with the conditions set out above (Article 6.1 and 6.2), in particular:

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- (i) costs related to return on capital and dividends paid by a beneficiary
  - (ii) debt and debt service charges
  - (iii) provisions for future losses or debts
  - (iv) interest owed
  - (v) currency exchange losses
  - (vi) bank costs charged by the beneficiary's bank for transfers from the granting authority
  - (vii) excessive or reckless expenditure
  - (viii) deductible or refundable VAT (including VAT paid by public bodies acting as public authority)
  - (ix) costs incurred or contributions for activities implemented during grant agreement suspension (see Article 31)
  - (x) in-kind contributions by third parties: not applicable
- (b) costs or contributions declared under other EU grants (or grants awarded by an EU Member State, non-EU country or other body implementing the EU budget), except for the following cases:
- (i) Synergy actions: not applicable
  - (ii) if the action grant is combined with an operating grant<sup>12</sup> running during the same period and the beneficiary can demonstrate that the operating grant does not cover any (direct or indirect) costs of the action grant
- (c) costs or contributions for staff of a national (or regional/local) administration, for activities that are part of the administration's normal activities (i.e. not undertaken only because of the grant)
- (d) costs or contributions (especially travel and subsistence) for staff or representatives of EU institutions, bodies or agencies
- (e) other :
- (i) country restrictions for eligible costs: not applicable
  - (ii) costs or contributions declared specifically ineligible in the call conditions.

#### 6.4 Consequences of non-compliance

If a beneficiary declares costs or contributions that are ineligible, they will be rejected (see Article 27).

This may also lead to other measures described in Chapter 5.

<sup>12</sup> For the definition, see Article 180(2)(b) of EU Financial Regulation 2018/1046: '**operating grant**' means an EU grant to finance "the functioning of a body which has an objective forming part of and supporting an EU policy".



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## **CHAPTER 4 GRANT IMPLEMENTATION**

### **SECTION 1 CONSORTIUM: BENEFICIARIES, AFFILIATED ENTITIES AND OTHER PARTICIPANTS**

#### **ARTICLE 7 — BENEFICIARIES**

The beneficiaries, as signatories of the Agreement, are fully responsible towards the granting authority for implementing it and for complying with all its obligations.

They must implement the Agreement to their best abilities, in good faith and in accordance with all the obligations and terms and conditions it sets out.

They must have the appropriate resources to implement the action and implement the action under their own responsibility and in accordance with Article 11. If they rely on affiliated entities or other participants (see Articles 8 and 9), they retain sole responsibility towards the granting authority and the other beneficiaries.

They are jointly responsible for the *technical* implementation of the action. If one of the beneficiaries fails to implement their part of the action, the other beneficiaries must ensure that this part is implemented by someone else (without being entitled to an increase of the maximum grant amount and subject to an amendment; see Article 39). The *financial* responsibility of each beneficiary in case of recoveries is governed by Article 22.

The beneficiaries (and their action) must remain eligible under the EU programme funding the grant for the entire duration of the action. Costs and contributions will be eligible only as long as the beneficiary and the action are eligible.

The **internal roles and responsibilities** of the beneficiaries are divided as follows:

- (a) Each beneficiary must:
  - (i) keep information stored in the Portal Participant Register up to date (see Article 19)
  - (ii) inform the granting authority (and the other beneficiaries) immediately of any events or circumstances likely to affect significantly or delay the implementation of the action (see Article 19)
  - (iii) submit to the coordinator in good time:
    - the prefinancing guarantees (if required; see Article 23)
    - the financial statements and certificates on the financial statements (CFS) (if required; see Articles 21 and 24.2 and Data Sheet, Point 4.3)
    - the contribution to the deliverables and technical reports (see Article 21)
    - any other documents or information required by the granting authority under the Agreement
  - (iv) submit via the Portal data and information related to the participation of their affiliated entities.

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(b) The coordinator must:

- (i) monitor that the action is implemented properly (see Article 11)
- (ii) act as the intermediary for all communications between the consortium and the granting authority, unless the Agreement or granting authority specifies otherwise, and in particular:
  - submit the prefinancing guarantees to the granting authority (if any)
  - request and review any documents or information required and verify their quality and completeness before passing them on to the granting authority
  - submit the deliverables and reports to the granting authority
  - inform the granting authority about the payments made to the other beneficiaries (report on the distribution of payments; if required, see Articles 22 and 32)
- (iii) distribute the payments received from the granting authority to the other beneficiaries without unjustified delay (see Article 22).

The coordinator may not delegate or subcontract the above-mentioned tasks to any other beneficiary or third party (including affiliated entities).

However, coordinators which are public bodies may delegate the tasks set out in Point (b)(ii) last indent and (iii) above to entities with ‘authorisation to administer’ which they have created or which are controlled by or affiliated to them. In this case, the coordinator retains sole responsibility for the payments and for compliance with the obligations under the Agreement.

Moreover, coordinators which are ‘sole beneficiaries’<sup>13</sup> (or similar, such as European research infrastructure consortia (ERICs)) may delegate the tasks set out in Point (b)(i) to (iii) above to one of their members. The coordinator retains sole responsibility for compliance with the obligations under the Agreement.

The beneficiaries must have **internal arrangements** regarding their operation and co-ordination, to ensure that the action is implemented properly.

If required by the granting authority (see Data Sheet, Point 1), these arrangements must be set out in a written **consortium agreement** between the beneficiaries, covering for instance:

- the internal organisation of the consortium
- the management of access to the Portal
- different distribution keys for the payments and financial responsibilities in case of recoveries (if any)
- additional rules on rights and obligations related to background and results (see Article 16)

<sup>13</sup> For the definition, see Article 187(2) EU Financial Regulation 2018/1046: “Where several entities satisfy the criteria for being awarded a grant and together form one entity, that entity may be treated as the **sole beneficiary**, including where it is specifically established for the purpose of implementing the action financed by the grant.”

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- settlement of internal disputes
- liability, indemnification and confidentiality arrangements between the beneficiaries.

The internal arrangements must not contain any provision contrary to this Agreement.

## **ARTICLE 8 — AFFILIATED ENTITIES**

Not applicable

## **ARTICLE 9 — OTHER PARTICIPANTS INVOLVED IN THE ACTION**

### **9.1 Associated partners**

The following entities which cooperate with a beneficiary will participate in the action as ‘associated partners’:

- **EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH (ETH)**, PIC 999979015
- **OASIS HUB LIMITED (OASIS)**, PIC 906361308
- **SEI OXFORD OFFICE LIMITED (SEI)**, PIC 998830535

Associated partners must implement the action tasks attributed to them in Annex 1 in accordance with Article 11. They may not charge costs or contributions to the action and the costs for their tasks are not eligible.

The tasks must be set out in Annex 1.

The beneficiaries must ensure that their contractual obligations under Articles 11 (proper implementation), 12 (conflict of interests), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the associated partners.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the associated partners.

### **9.2 Third parties giving in-kind contributions to the action**

Other third parties may give in-kind contributions to the action (i.e. personnel, equipment, other goods, works and services, etc. which are free-of-charge) if necessary for the implementation.

Third parties giving in-kind contributions do not implement any action tasks. They may not charge costs or contributions to the action, but the costs for the in-kind contributions are eligible and may be charged by the beneficiaries which use them, under the conditions set out in Article 6. The costs will be included in Annex 2 as part of the beneficiaries’ costs.

The third parties and their in-kind contributions should be set out in Annex 1.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF,

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Court of Auditors (ECA), etc.) can exercise their rights also towards the third parties giving in-kind contributions.

### 9.3 Subcontractors

Subcontractors may participate in the action, if necessary for the implementation.

Subcontractors must implement their action tasks in accordance with Article 11. The costs for the subcontracted tasks (invoiced price from the subcontractor) are eligible and may be charged by the beneficiaries, under the conditions set out in Article 6. The costs will be included in Annex 2 as part of the beneficiaries' costs.

The beneficiaries must ensure that their contractual obligations under Articles 11 (proper implementation), 12 (conflict of interest), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the subcontractors.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the subcontractors.

### 9.4 Recipients of financial support to third parties

If the action includes providing financial support to third parties (e.g. grants, prizes or similar forms of support), the beneficiaries must ensure that their contractual obligations under Articles 12 (conflict of interest), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the third parties receiving the support (recipients).

The beneficiaries must also ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the recipients.

## ARTICLE 10 — PARTICIPANTS WITH SPECIAL STATUS

### 10.1 Non-EU participants

Participants which are established in a non-EU country (if any) undertake to comply with their obligations under the Agreement and:

- to respect general principles (including fundamental rights, values and ethical principles, environmental and labour standards, rules on classified information, intellectual property rights, visibility of funding and protection of personal data)
- for the submission of certificates under Article 24: to use qualified external auditors which are independent and comply with comparable standards as those set out in EU Directive 2006/43/EC<sup>14</sup>
- for the controls under Article 25: to allow for checks, reviews, audits and investigations

<sup>14</sup> Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts or similar national regulations (OJ L 157, 9.6.2006, p. 87).

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(including on-the-spot checks, visits and inspections) by the bodies mentioned in that Article (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.).

Special rules on dispute settlement apply (see Data Sheet, Point 5).

## 10.2 Participants which are international organisations

Participants which are international organisations (IOs; if any) undertake to comply with their obligations under the Agreement and:

- to respect general principles (including fundamental rights, values and ethical principles, environmental and labour standards, rules on classified information, intellectual property rights, visibility of funding and protection of personal data)
- for the submission of certificates under Article 24: to use either independent public officers or external auditors which comply with comparable standards as those set out in EU Directive 2006/43/EC
- for the controls under Article 25: to allow for the checks, reviews, audits and investigations by the bodies mentioned in that Article, taking into account the specific agreements concluded by them and the EU (if any).

For such participants, nothing in the Agreement will be interpreted as a waiver of their privileges or immunities, as accorded by their constituent documents or international law.

Special rules on applicable law and dispute settlement apply (see Article 43 and Data Sheet, Point 5).

## 10.3 Pillar-assessed participants

Pillar-assessed participants (if any) may rely on their own systems, rules and procedures, in so far as they have been positively assessed and do not call into question the decision awarding the grant or breach the principle of equal treatment of applicants or beneficiaries.

‘Pillar-assessment’ means a review by the European Commission on the systems, rules and procedures which participants use for managing EU grants (in particular internal control system, accounting system, external audits, financing of third parties, rules on recovery and exclusion, information on recipients and protection of personal data; see Article 154 EU Financial Regulation 2018/1046).

Participants with a positive pillar assessment may rely on their own systems, rules and procedures, in particular for:

- record-keeping (Article 20): may be done in accordance with internal standards, rules and procedures
- currency conversion for financial statements (Article 21): may be done in accordance with usual accounting practices
- guarantees (Article 23): for public law bodies, prefinancing guarantees are not needed
- certificates (Article 24):
  - certificates on the financial statements (CFS): may be provided by their regular internal

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or external auditors and in accordance with their internal financial regulations and procedures

- certificates on usual accounting practices (CoMUC): are not needed if those practices are covered by an ex-ante assessment

and use the following specific rules, for:

- recoveries (Article 22): in case of financial support to third parties, there will be no recovery if the participant has done everything possible to retrieve the undue amounts from the third party receiving the support (including legal proceedings) and non-recovery is not due to an error or negligence on its part
- checks, reviews, audits and investigations by the EU (Article 25): will be conducted taking into account the rules and procedures specifically agreed between them and the framework agreement (if any)
- impact evaluation (Article 26): will be conducted in accordance with the participant's internal rules and procedures and the framework agreement (if any)
- grant agreement suspension (Article 31): certain costs incurred during grant suspension are eligible (notably, minimum costs necessary for a possible resumption of the action and costs relating to contracts which were entered into before the pre-information letter was received and which could not reasonably be suspended, reallocated or terminated on legal grounds)
- grant agreement termination (Article 32): the final grant amount and final payment will be calculated taking into account also costs relating to contracts due for execution only after termination takes effect, if the contract was entered into before the pre-information letter was received and could not reasonably be terminated on legal grounds
- liability for damages (Article 33.2): the granting authority must be compensated for damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement only if the damage is due to an infringement of the participant's internal rules and procedures or due to a violation of third parties' rights by the participant or one of its employees or individual for whom the employees are responsible.

Participants whose pillar assessment covers procurement and granting procedures may also do purchases, subcontracting and financial support to third parties (Article 6.2) in accordance with their internal rules and procedures for purchases, subcontracting and financial support.

Participants whose pillar assessment covers data protection rules may rely on their internal standards, rules and procedures for data protection (Article 15).

The participants may however not rely on provisions which would breach the principle of equal treatment of applicants or beneficiaries or call into question the decision awarding the grant, such as in particular:

- eligibility (Article 6)
- consortium roles and set-up (Articles 7-9)

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- security and ethics (Articles 13, 14)
- IPR (including background and results, access rights and rights of use), communication, dissemination and visibility (Articles 16 and 17)
- information obligation (Article 19)
- payment, reporting and amendments (Articles 21, 22 and 39)
- rejections, reductions, suspensions and terminations (Articles 27, 28, 29-32)

If the pillar assessment was subject to remedial measures, reliance on the internal systems, rules and procedures is subject to compliance with those remedial measures.

Participants whose assessment has not yet been updated to cover (the new rules on) data protection may rely on their internal systems, rules and procedures, provided that they ensure that personal data is:

- processed lawfully, fairly and in a transparent manner in relation to the data subject
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the personal data.

Participants must inform the coordinator without delay of any changes to the systems, rules and procedures that were part of the pillar assessment. The coordinator must immediately inform the granting authority.

Pillar-assessed participants that have also concluded a framework agreement with the EU, may moreover — under the same conditions as those above (i.e. not call into question the decision awarding the grant or breach the principle of equal treatment of applicants or beneficiaries) — rely on the provisions set out in that framework agreement.

## **SECTION 2 RULES FOR CARRYING OUT THE ACTION**

### **ARTICLE 11 — PROPER IMPLEMENTATION OF THE ACTION**

#### **11.1 Obligation to properly implement the action**

The beneficiaries must implement the action as described in Annex 1 and in compliance with the provisions of the Agreement, the call conditions and all legal obligations under applicable EU, international and national law.

#### **11.2 Consequences of non-compliance**

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If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 12 — CONFLICT OF INTERESTS**

### **12.1 Conflict of interests**

The beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the Agreement could be compromised for reasons involving family, emotional life, political or national affinity, economic interest or any other direct or indirect interest ('conflict of interests').

They must formally notify the granting authority without delay of any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The granting authority may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

### **12.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28) and the grant or the beneficiary may be terminated (see Article 32).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 13 — CONFIDENTIALITY AND SECURITY**

### **13.1 Sensitive information**

The parties must keep confidential any data, documents or other material (in any form) that is identified as sensitive in writing ('sensitive information') — during the implementation of the action and for at least until the time-limit set out in the Data Sheet (see Point 6).

If a beneficiary requests, the granting authority may agree to keep such information confidential for a longer period.

Unless otherwise agreed between the parties, they may use sensitive information only to implement the Agreement.

The beneficiaries may disclose sensitive information to their personnel or other participants involved in the action only if they:

- (a) need to know it in order to implement the Agreement and
- (b) are bound by an obligation of confidentiality.

The granting authority may disclose sensitive information to its staff and to other EU institutions and bodies.

It may moreover disclose sensitive information to third parties, if:



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- (a) this is necessary to implement the Agreement or safeguard the EU financial interests and
- (b) the recipients of the information are bound by an obligation of confidentiality.

The confidentiality obligations no longer apply if:

- (a) the disclosing party agrees to release the other party
- (b) the information becomes publicly available, without breaching any confidentiality obligation
- (c) the disclosure of the sensitive information is required by EU, international or national law.

Specific confidentiality rules (if any) are set out in Annex 5.

### **13.2 Classified information**

The parties must handle classified information in accordance with the applicable EU, international or national law on classified information (in particular, Decision 2015/444<sup>15</sup> and its implementing rules).

Deliverables which contain classified information must be submitted according to special procedures agreed with the granting authority.

Action tasks involving classified information may be subcontracted only after explicit approval (in writing) from the granting authority.

Classified information may not be disclosed to any third party (including participants involved in the action implementation) without prior explicit written approval from the granting authority.

Specific security rules (if any) are set out in Annex 5.

### **13.3 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 14 — ETHICS AND VALUES**

### **14.1 Ethics**

The action must be carried out in line with the highest ethical standards and the applicable EU, international and national law on ethical principles.

Specific ethics rules (if any) are set out in Annex 5.

### **14.2 Values**

The beneficiaries must commit to and ensure the respect of basic EU values (such as respect for

<sup>15</sup> Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).

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human dignity, freedom, democracy, equality, the rule of law and human rights, including the rights of minorities).

Specific rules on values (if any) are set out in Annex 5.

### **14.3 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 15 — DATA PROTECTION**

### **15.1 Data processing by the granting authority**

Any personal data under the Agreement will be processed under the responsibility of the data controller of the granting authority in accordance with and for the purposes set out in the Portal Privacy Statement.

For grants where the granting authority is the European Commission, an EU regulatory or executive agency, joint undertaking or other EU body, the processing will be subject to Regulation 2018/1725<sup>16</sup>.

### **15.2 Data processing by the beneficiaries**

The beneficiaries must process personal data under the Agreement in compliance with the applicable EU, international and national law on data protection (in particular, Regulation 2016/679<sup>17</sup>).

They must ensure that personal data is:

- processed lawfully, fairly and in a transparent manner in relation to the data subjects
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the data.

<sup>16</sup> Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

<sup>17</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC ('GDPR') (OJ L 119, 4.5.2016, p. 1).

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The beneficiaries may grant their personnel access to personal data only if it is strictly necessary for implementing, managing and monitoring the Agreement. The beneficiaries must ensure that the personnel is under a confidentiality obligation.

The beneficiaries must inform the persons whose data are transferred to the granting authority and provide them with the Portal Privacy Statement.

### **15.3 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 16 — INTELLECTUAL PROPERTY RIGHTS (IPR) — BACKGROUND AND RESULTS — ACCESS RIGHTS AND RIGHTS OF USE**

### **16.1 Background and access rights to background**

The beneficiaries must give each other and the other participants access to the background identified as needed for implementing the action, subject to any specific rules in Annex 5.

‘Background’ means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that is:

- (a) held by the beneficiaries before they acceded to the Agreement and
- (b) needed to implement the action or exploit the results.

If background is subject to rights of a third party, the beneficiary concerned must ensure that it is able to comply with its obligations under the Agreement.

### **16.2 Ownership of results**

The granting authority does not obtain ownership of the results produced under the action.

‘Results’ means any tangible or intangible effect of the action, such as data, know-how or information, whatever its form or nature, whether or not it can be protected, as well as any rights attached to it, including intellectual property rights.

### **16.3 Rights of use of the granting authority on materials, documents and information received for policy, information, communication, dissemination and publicity purposes**

The granting authority has the right to use non-sensitive information relating to the action and materials and documents received from the beneficiaries (notably summaries for publication, deliverables, as well as any other material, such as pictures or audio-visual material, in paper or electronic form) for policy, information, communication, dissemination and publicity purposes — during the action or afterwards.

The right to use the beneficiaries’ materials, documents and information is granted in the form of a royalty-free, non-exclusive and irrevocable licence, which includes the following rights:

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- (a) **use for its own purposes** (in particular, making them available to persons working for the granting authority or any other EU service (including institutions, bodies, offices, agencies, etc.) or EU Member State institution or body; copying or reproducing them in whole or in part, in unlimited numbers; and communication through press information services)
- (b) **distribution to the public** (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes)
- (c) **editing or redrafting** (including shortening, summarising, inserting other elements (e.g. meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, use in a compilation)
- (d) **translation**
- (e) **storage** in paper, electronic or other form
- (f) **archiving**, in line with applicable document-management rules
- (g) the right to authorise **third parties** to act on its behalf or sub-license to third parties the modes of use set out in Points (b), (c), (d) and (f), if needed for the information, communication and publicity activity of the granting authority
- (h) **processing**, analysing, aggregating the materials, documents and information received and **producing derivative works**.

The rights of use are granted for the whole duration of the industrial or intellectual property rights concerned.

If materials or documents are subject to moral rights or third party rights (including intellectual property rights or rights of natural persons on their image and voice), the beneficiaries must ensure that they comply with their obligations under this Agreement (in particular, by obtaining the necessary licences and authorisations from the rights holders concerned).

Where applicable, the granting authority will insert the following information:

“© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the [name of granting authority] under conditions.”

#### 16.4 Specific rules on IPR, results and background

Specific rules regarding intellectual property rights, results and background (if any) are set out in Annex 5.

#### 16.5 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such a breach may also lead to other measures described in Chapter 5.

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## ARTICLE 17 — COMMUNICATION, DISSEMINATION AND VISIBILITY

### 17.1 Communication — Dissemination — Promoting the action

Unless otherwise agreed with the granting authority, the beneficiaries must promote the action and its results by providing targeted information to multiple audiences (including the media and the public), in accordance with Annex 1 and in a strategic, coherent and effective manner.

Before engaging in a communication or dissemination activity expected to have a major media impact, the beneficiaries must inform the granting authority.

### 17.2 Visibility — European flag and funding statement

Unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) and funding statement (translated into local languages, where appropriate):



Funded by the  
European Union



Co-funded by the  
European Union



Funded by the  
European Union



Co-funded by the  
European Union

The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text.

Apart from the emblem, no other visual identity or logo may be used to highlight the EU support.

When displayed in association with other logos (e.g. of beneficiaries or sponsors), the emblem must be displayed at least as prominently and visibly as the other logos.

For the purposes of their obligations under this Article, the beneficiaries may use the emblem without first obtaining approval from the granting authority. This does not, however, give them the right to

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exclusive use. Moreover, they may not appropriate the emblem or any similar trademark or logo, either by registration or by any other means.

### **17.3 Quality of information — Disclaimer**

Any communication or dissemination activity related to the action must use factually accurate information.

Moreover, it must indicate the following disclaimer (translated into local languages where appropriate):

“Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or [name of the granting authority]. Neither the European Union nor the granting authority can be held responsible for them.”

### **17.4 Specific communication, dissemination and visibility rules**

Specific communication, dissemination and visibility rules (if any) are set out in Annex 5.

### **17.5 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 18 — SPECIFIC RULES FOR CARRYING OUT THE ACTION**

### **18.1 Specific rules for carrying out the action**

Specific rules for implementing the action (if any) are set out in Annex 5.

### **18.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such a breach may also lead to other measures described in Chapter 5.

## **SECTION 3 GRANT ADMINISTRATION**

### **ARTICLE 19 — GENERAL INFORMATION OBLIGATIONS**

#### **19.1 Information requests**

The beneficiaries must provide — during the action or afterwards and in accordance with Article 7 — any information requested in order to verify eligibility of the costs or contributions declared, proper implementation of the action and compliance with the other obligations under the Agreement.

The information provided must be accurate, precise and complete and in the format requested, including electronic format.

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## 19.2 Participant Register data updates

The beneficiaries must keep — at all times, during the action or afterwards — their information stored in the Portal Participant Register up to date, in particular, their name, address, legal representatives, legal form and organisation type.

## 19.3 Information about events and circumstances which impact the action

The beneficiaries must immediately inform the granting authority (and the other beneficiaries) of any of the following:

- (a) **events** which are likely to affect or delay the implementation of the action or affect the EU's financial interests, in particular:
  - (i) changes in their legal, financial, technical, organisational or ownership situation (including changes linked to one of the exclusion grounds listed in the declaration of honour signed before grant signature)
  - (ii) linked action information: not applicable
- (b) **circumstances** affecting:
  - (i) the decision to award the grant or
  - (ii) compliance with requirements under the Agreement.

## 19.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## ARTICLE 20 — RECORD-KEEPING

### 20.1 Keeping records and supporting documents

The beneficiaries must — at least until the time-limit set out in the Data Sheet (see Point 6) — keep records and other supporting documents to prove the proper implementation of the action in line with the accepted standards in the respective field (if any).

In addition, the beneficiaries must — for the same period — keep the following to justify the amounts declared:

- (a) for actual costs: adequate records and supporting documents to prove the costs declared (such as contracts, subcontracts, invoices and accounting records); in addition, the beneficiaries' usual accounting and internal control procedures must enable direct reconciliation between the amounts declared, the amounts recorded in their accounts and the amounts stated in the supporting documents
- (b) for flat-rate costs and contributions (if any): adequate records and supporting documents to prove the eligibility of the costs or contributions to which the flat-rate is applied

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- (c) for the following simplified costs and contributions: the beneficiaries do not need to keep specific records on the actual costs incurred, but must keep:
- (i) for unit costs and contributions (if any): adequate records and supporting documents to prove the number of units declared
  - (ii) for lump sum costs and contributions (if any): adequate records and supporting documents to prove proper implementation of the work as described in Annex 1
  - (iii) for financing not linked to costs (if any): adequate records and supporting documents to prove the achievement of the results or the fulfilment of the conditions as described in Annex 1
- (d) for unit, flat-rate and lump sum costs and contributions according to usual cost accounting practices (if any): the beneficiaries must keep any adequate records and supporting documents to prove that their cost accounting practices have been applied in a consistent manner, based on objective criteria, regardless of the source of funding, and that they comply with the eligibility conditions set out in Articles 6.1 and 6.2.

Moreover, the following is needed for specific budget categories:

- (e) for personnel costs: time worked for the beneficiary under the action must be supported by declarations signed monthly by the person and their supervisor, unless another reliable time-record system is in place; the granting authority may accept alternative evidence supporting the time worked for the action declared, if it considers that it offers an adequate level of assurance
- (f) additional record-keeping rules: not applicable

The records and supporting documents must be made available upon request (see Article 19) or in the context of checks, reviews, audits or investigations (see Article 25).

If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement (including the extension of findings; see Article 25), the beneficiaries must keep these records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. The granting authority may accept non-original documents if they offer a comparable level of assurance.

## **20.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, costs or contributions insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 27), and the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## **ARTICLE 21 — REPORTING**

### **21.1 Continuous reporting**



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The beneficiaries must continuously report on the progress of the action (e.g. **deliverables, milestones, outputs/outcomes, critical risks, indicators**, etc; if any), in the Portal Continuous Reporting tool and in accordance with the timing and conditions it sets out (as agreed with the granting authority).

Standardised deliverables (e.g. progress reports not linked to payments, reports on cumulative expenditure, special reports, etc; if any) must be submitted using the templates published on the Portal.

## 21.2 Periodic reporting: Technical reports and financial statements

In addition, the beneficiaries must provide reports to request payments, in accordance with the schedule and modalities set out in the Data Sheet (see Point 4.2):

- for additional prefinancings (if any): an **additional prefinancing report**
- for interim payments (if any) and the final payment: a **periodic report**.

The prefinancing and periodic reports include a technical and financial part.

The technical part includes an overview of the action implementation. It must be prepared using the template available in the Portal Periodic Reporting tool.

The financial part of the additional prefinancing report includes a statement on the use of the previous prefinancing payment.

The financial part of the periodic report includes:

- the financial statements (individual and consolidated; for all beneficiaries/affiliated entities)
- the explanation on the use of resources (or detailed cost reporting table, if required)
- the certificates on the financial statements (CFS) (if required; see Article 24.2 and Data Sheet, Point 4.3).

The **financial statements** must detail the eligible costs and contributions for each budget category and, for the final payment, also the revenues for the action (see Articles 6 and 22).

All eligible costs and contributions incurred should be declared, even if they exceed the amounts indicated in the estimated budget (see Annex 2). Amounts that are not declared in the individual financial statements will not be taken into account by the granting authority.

By signing the financial statements (directly in the Portal Periodic Reporting tool), the beneficiaries confirm that:

- the information provided is complete, reliable and true
- the costs and contributions declared are eligible (see Article 6)
- the costs and contributions can be substantiated by adequate records and supporting documents (see Article 20) that will be produced upon request (see Article 19) or in the context of checks, reviews, audits and investigations (see Article 25)
- for the final periodic report: all the revenues have been declared (if required; see Article 22).

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Beneficiaries will have to submit also the financial statements of their affiliated entities (if any). In case of recoveries (see Article 22), beneficiaries will be held responsible also for the financial statements of their affiliated entities.

### **21.3 Currency for financial statements and conversion into euros**

The financial statements must be drafted in euro.

Beneficiaries with general accounts established in a currency other than the euro must convert the costs recorded in their accounts into euro, at the average of the daily exchange rates published in the C series of the *Official Journal of the European Union* (ECB website), calculated over the corresponding reporting period.

If no daily euro exchange rate is published in the *Official Journal* for the currency in question, they must be converted at the average of the monthly accounting exchange rates published on the European Commission website (InforEuro), calculated over the corresponding reporting period.

Beneficiaries with general accounts in euro must convert costs incurred in another currency into euro according to their usual accounting practices.

### **21.4 Reporting language**

The reporting must be in the language of the Agreement, unless otherwise agreed with the granting authority (see Data Sheet, Point 4.2).

### **21.5 Consequences of non-compliance**

If a report submitted does not comply with this Article, the granting authority may suspend the payment deadline (see Article 29) and apply other measures described in Chapter 5.

If the coordinator breaches its reporting obligations, the granting authority may terminate the grant or the coordinator's participation (see Article 32) or apply other measures described in Chapter 5.

## **ARTICLE 22 — PAYMENTS AND RECOVERIES — CALCULATION OF AMOUNTS DUE**

### **22.1 Payments and payment arrangements**

Payments will be made in accordance with the schedule and modalities set out in the Data Sheet (see Point 4.2).

They will be made in euro to the bank account indicated by the coordinator (see Data Sheet, Point 4.2) and must be distributed without unjustified delay (restrictions may apply to distribution of the initial prefinancing payment; see Data Sheet, Point 4.2).

Payments to this bank account will discharge the granting authority from its payment obligation.

The cost of payment transfers will be borne as follows:

- the granting authority bears the cost of transfers charged by its bank
- the beneficiary bears the cost of transfers charged by its bank

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- the party causing a repetition of a transfer bears all costs of the repeated transfer.

Payments by the granting authority will be considered to have been carried out on the date when they are debited to its account.

## 22.2 Recoveries

Recoveries will be made, if — at beneficiary termination, final payment or afterwards — it turns out that the granting authority has paid too much and needs to recover the amounts undue.

Each beneficiary's financial responsibility in case of recovery is in principle limited to their own debt and undue amounts of their affiliated entities.

In case of enforced recoveries (see Article 22.4), affiliated entities will be held liable for repaying debts of their beneficiaries, if required by the granting authority (see Data Sheet, Point 4.4).

## 22.3 Amounts due

### 22.3.1 Prefinancing payments

The aim of the prefinancing is to provide the beneficiaries with a float.

It remains the property of the EU until the final payment.

For **initial prefinancings** (if any), the amount due, schedule and modalities are set out in the Data Sheet (see Point 4.2).

For **additional prefinancings** (if any), the amount due, schedule and modalities are also set out in the Data Sheet (see Point 4.2). However, if the statement on the use of the previous prefinancing payment shows that less than 70% was used, the amount set out in the Data Sheet will be reduced by the difference between the 70% threshold and the amount used.

The contribution to the Mutual Insurance Mechanism will be retained from the prefinancing payments (at the rate and in accordance with the modalities set out in the Data Sheet, see Point 4.2) and transferred to the Mechanism.

Prefinancing payments (or parts of them) may be offset (without the beneficiaries' consent) against amounts owed by a beneficiary to the granting authority — up to the amount due to that beneficiary.

For grants where the granting authority is the European Commission or an EU executive agency, offsetting may also be done against amounts owed to other Commission services or executive agencies.

Payments will not be made if the payment deadline or payments are suspended (see Articles 29 and 30).

### 22.3.2 Amount due at beneficiary termination — Recovery

In case of beneficiary termination, the granting authority will determine the provisional amount due for the beneficiary concerned. Payments (if any) will be made with the next interim or final payment.

The **amount due** will be calculated in the following step:

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### Step 1 — Calculation of the total accepted EU contribution

#### Step 1 — Calculation of the total accepted EU contribution

The granting authority will first calculate the ‘accepted EU contribution’ for the beneficiary for all reporting periods, by calculating the ‘maximum EU contribution to costs’ (applying the funding rate to the accepted costs of the beneficiary), taking into account requests for a lower contribution to costs and CFS threshold cappings (if any; see Article 24.5) and adding the contributions (accepted unit, flat-rate or lump sum contributions and financing not linked to costs, if any).

After that, the granting authority will take into account grant reductions (if any). The resulting amount is the ‘total accepted EU contribution’ for the beneficiary.

The **balance** is then calculated by deducting the payments received (if any; see report on the distribution of payments in Article 32), from the total accepted EU contribution:

$$\left\{ \begin{array}{l} \text{total accepted EU contribution for the beneficiary} \\ \text{minus} \\ \text{prefinancing and interim payments received (if any)} \end{array} \right\}.$$

If the balance is **positive**, the amount will be included in the next interim or final payment to the consortium.

If the balance is **negative**, it will be **recovered** in accordance with the following procedure:

The granting authority will send a **pre-information letter** to the beneficiary concerned:

- formally notifying the intention to recover, the amount due, the amount to be recovered and the reasons why and
- requesting observations within 30 days of receiving notification.

If no observations are submitted (or the granting authority decides to pursue recovery despite the observations it has received), it will confirm the amount to be recovered and ask this amount to be paid to the coordinator (**confirmation letter**).

If payment is not made to the coordinator by the date specified in the confirmation letter, the granting authority may call on the Mutual Insurance Mechanism to intervene, if continuation of the action is guaranteed and the conditions set out in the rules governing the Mechanism are met.

In this case, it will send a **beneficiary recovery letter**, together with a **debit note** with the terms and date for payment.

The debit note for the beneficiary will include the amount calculated for the affiliated entities which also had to end their participation (if any).

If payment is not made by the date specified in the debit note, the granting authority will **enforce recovery** in accordance with Article 22.4.

The amounts will later on also be taken into account for the next interim or final payment.

### 22.3.3 Interim payments

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Interim payments reimburse the eligible costs and contributions claimed for the implementation of the action during the reporting periods (if any).

Interim payments (if any) will be made in accordance with the schedule and modalities set out the Data Sheet (see Point 4.2).

Payment is subject to the approval of the periodic report. Its approval does not imply recognition of compliance, authenticity, completeness or correctness of its content.

The **interim payment** will be calculated by the granting authority in the following steps:

Step 1 — Calculation of the total accepted EU contribution

Step 2 — Limit to the interim payment ceiling

#### Step 1 — Calculation of the total accepted EU contribution

The granting authority will calculate the ‘accepted EU contribution’ for the action for the reporting period, by first calculating the ‘maximum EU contribution to costs’ (applying the funding rate to the accepted costs of each beneficiary), taking into account requests for a lower contribution to costs, and CFS threshold cappings (if any; see Article 24.5) and adding the contributions (accepted unit, flat-rate or lump sum contributions and financing not linked to costs, if any).

After that, the granting authority will take into account grant reductions from beneficiary termination (if any). The resulting amount is the ‘total accepted EU contribution’.

#### Step 2 — Limit to the interim payment ceiling

The resulting amount is then capped to ensure that the total amount of prefinancing and interim payments (if any) does not exceed the interim payment ceiling set out in the Data Sheet (see Point 4.2).

Interim payments (or parts of them) may be offset (without the beneficiaries’ consent) against amounts owed by a beneficiary to the granting authority — up to the amount due to that beneficiary.

For grants where the granting authority is the European Commission or an EU executive agency, offsetting may also be done against amounts owed to other Commission services or executive agencies.

Payments will not be made if the payment deadline or payments are suspended (see Articles 29 and 30).

### **22.3.4 Final payment — Final grant amount — Revenues and Profit — Recovery**

The final payment (payment of the balance) reimburses the remaining part of the eligible costs and contributions claimed for the implementation of the action (if any).

The final payment will be made in accordance with the schedule and modalities set out in the Data Sheet (see Point 4.2).

Payment is subject to the approval of the final periodic report. Its approval does not imply recognition of compliance, authenticity, completeness or correctness of its content.

The **final grant amount for the action** will be calculated in the following steps:

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Step 1 — Calculation of the total accepted EU contribution

Step 2 — Limit to the maximum grant amount

Step 3 — Reduction due to the no-profit rule

#### Step 1 — Calculation of the total accepted EU contribution

The granting authority will first calculate the ‘accepted EU contribution’ for the action for all reporting periods, by calculating the ‘maximum EU contribution to costs’ (applying the funding rate to the total accepted costs of each beneficiary), taking into account requests for a lower contribution to costs, CFS threshold cappings (if any; see Article 24.5) and adding the contributions (accepted unit, flat-rate or lump sum contributions and financing not linked to costs, if any).

After that, the granting authority will take into account grant reductions (if any). The resulting amount is the ‘total accepted EU contribution’.

#### Step 2 — Limit to the maximum grant amount

If the resulting amount is higher than the maximum grant amount set out in Article 5.2, it will be limited to the latter.

#### Step 3 — Reduction due to the no-profit rule

If the no-profit rule is provided for in the Data Sheet (see Point 4.2), the grant must not produce a profit (i.e. surplus of the amount obtained following Step 2 plus the action’s revenues, over the eligible costs and contributions approved by the granting authority).

‘Revenue’ is all income generated by the action, during its duration (see Article 4), for beneficiaries that are profit legal entities (— with the exception of income generated by the exploitation of results, which are not considered as revenues).

If there is a profit, it will be deducted in proportion to the final rate of reimbursement of the eligible costs approved by the granting authority (as compared to the amount calculated following Steps 1 and 2 minus the contributions).

The **balance** (final payment) is then calculated by deducting the total amount of prefinancing and interim payments already made (if any), from the final grant amount:

$$\left. \begin{array}{l} \{\text{final grant amount} \\ \text{minus} \\ \{\text{prefinancing and interim payments made (if any)}\} \end{array} \right\}$$

If the balance is **positive**, it will be **paid** to the coordinator.

The amount retained for the Mutual Insurance Mechanism (see above) will be released and **paid** to the coordinator (in accordance with the rules governing the Mechanism).

The final payment (or part of it) may be offset (without the beneficiaries’ consent) against amounts owed by a beneficiary to the granting authority — up to the amount due to that beneficiary.

For grants where the granting authority is the European Commission or an EU executive agency,

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offsetting may also be done against amounts owed to other Commission services or executive agencies.

Payments will not be made if the payment deadline or payments are suspended (see Articles 29 and 30).

If — despite the release of the Mutual Insurance Mechanism contribution — the balance is **negative**, it will be **recovered** in accordance with the following procedure:

The granting authority will send a **pre-information letter** to the coordinator:

- formally notifying the intention to recover, the final grant amount, the amount to be recovered and the reasons why
- requesting a report on the distribution of payments to the beneficiaries within 30 days of receiving notification and
- requesting observations within 30 days of receiving notification.

If no observations are submitted (or the granting authority decides to pursue recovery despite the observations it has received) and the coordinator has submitted the report on the distribution of payments, it will calculate the **share of the debt per beneficiary**, by:

- (a) identifying the beneficiaries for which the amount calculated as follows is negative:

$$\left\{ \left\{ \begin{array}{l} \text{total accepted EU contribution for the beneficiary} \\ \text{divided by} \\ \text{total accepted EU contribution for the action} \end{array} \right\} \right. \\ \left. \begin{array}{l} \text{multiplied by} \\ \text{final grant amount for the action} \end{array} \right\}, \\ \text{minus} \\ \left. \left\{ \text{prefinancing and interim payments received by the beneficiary (if any)} \right\} \right\}$$

and

- (b) dividing the debt:

$$\left\{ \begin{array}{l} \text{amount calculated according to point (a) for the beneficiary concerned} \\ \text{divided by} \\ \text{the sum of the amounts calculated according to point (a) for all the beneficiaries identified according to} \\ \text{point (a)} \end{array} \right\} \\ \text{multiplied by} \\ \left. \begin{array}{l} \text{the amount to be recovered} \end{array} \right\}.$$

and confirm the amount to be recovered from each beneficiary concerned (**confirmation letter**), together with **debit notes** with the terms and date for payment.

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The debit notes for beneficiaries will include the amounts calculated for their affiliated entities (if any).

If the coordinator has not submitted the report on the distribution of payments, the granting authority will **recover** the full amount from the coordinator (**confirmation letter** and **debit note** with the terms and date for payment).

If payment is not made by the date specified in the debit note, the granting authority will **enforce recovery** in accordance with Article 22.4.

### **22.3.5 Audit implementation after final payment — Revised final grant amount — Recovery**

If — after the final payment (in particular, after checks, reviews, audits or investigations; see Article 25) — the granting authority rejects costs or contributions (see Article 27) or reduces the grant (see Article 28), it will calculate the **revised final grant amount** for the beneficiary concerned.

The **beneficiary revised final grant amount** will be calculated in the following step:

Step 1 — Calculation of the revised total accepted EU contribution

#### Step 1 — Calculation of the revised total accepted EU contribution

The granting authority will first calculate the ‘revised accepted EU contribution’ for the beneficiary, by calculating the ‘revised accepted costs’ and ‘revised accepted contributions’.

After that, it will take into account grant reductions (if any). The resulting ‘revised total accepted EU contribution’ is the beneficiary revised final grant amount.

If the revised final grant amount is lower than the beneficiary’s final grant amount (i.e. its share in the final grant amount for the action), it will be **recovered** in accordance with the following procedure:

The **beneficiary final grant amount** (i.e. share in the final grant amount for the action) is calculated as follows:

$$\left\{ \begin{array}{l} \text{\{total accepted EU contribution for the beneficiary} \\ \text{divided by} \\ \text{total accepted EU contribution for the action\}} \\ \text{multiplied by} \\ \text{final grant amount for the action\}}. \end{array} \right.$$

The granting authority will send a **pre-information letter** to the beneficiary concerned:

- formally notifying the intention to recover, the amount to be recovered and the reasons why and
- requesting observations within 30 days of receiving notification.

If no observations are submitted (or the granting authority decides to pursue recovery despite the observations it has received), it will confirm the amount to be recovered (**confirmation letter**), together with a **debit note** with the terms and the date for payment.

Recoveries against affiliated entities (if any) will be handled through their beneficiaries.



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If payment is not made by the date specified in the debit note, the granting authority will **enforce recovery** in accordance with Article 22.4.

## 22.4 Enforced recovery

If payment is not made by the date specified in the debit note, the amount due will be recovered:

- (a) by offsetting the amount — without the coordinator or beneficiary's consent — against any amounts owed to the coordinator or beneficiary by the granting authority.

In exceptional circumstances, to safeguard the EU financial interests, the amount may be offset before the payment date specified in the debit note.

For grants where the granting authority is the European Commission or an EU executive agency, debts may also be offset against amounts owed by other Commission services or executive agencies.

- (b) financial guarantee(s): not applicable
- (c) joint and several liability of beneficiaries: not applicable
- (d) by holding affiliated entities jointly and severally liable (if any, see Data Sheet, Point 4.4)
- (e) by taking legal action (see Article 43) or, provided that the granting authority is the European Commission or an EU executive agency, by adopting an enforceable decision under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 100(2) of EU Financial Regulation 2018/1046.

If the Mutual Insurance Mechanism was called on by the granting authority to intervene, recovery will be continued in the name of the Mutual Insurance Mechanism. If two debit notes were sent, the second one (in the name of the Mutual Insurance Mechanism) will be considered to replace the first one (in the name of the granting authority). Where the MIM intervened, offsetting, enforceable decisions or any other of the above-mentioned forms of enforced recovery may be used *mutatis mutandis*.

The amount to be recovered will be increased by **late-payment interest** at the rate set out in Article 22.5, from the day following the payment date in the debit note, up to and including the date the full payment is received.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2015/2366<sup>18</sup> applies.

For grants where the granting authority is an EU executive agency, enforced recovery by offsetting or enforceable decision will be done by the services of the European Commission (see also Article 43).

## 22.5 Consequences of non-compliance

<sup>18</sup> Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (OJ L 337, 23.12.2015, p. 35).

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**22.5.1** If the granting authority does not pay within the payment deadlines (see above), the beneficiaries are entitled to **late-payment interest** at the rate applied by the European Central Bank (ECB) for its main refinancing operations in euros ('reference rate'), plus the rate specified in the Data Sheet (Point 4.2). The reference rate is the rate in force on the first day of the month in which the payment deadline expires, as published in the C series of the *Official Journal of the European Union*.

If the late-payment interest is lower than or equal to EUR 200, it will be paid to the coordinator only on request submitted within two months of receiving the late payment.

Late-payment interest is not due if all beneficiaries are EU Member States (including regional and local government authorities or other public bodies acting on behalf of a Member State for the purpose of this Agreement).

If payments or the payment deadline are suspended (see Articles 29 and 30), payment will not be considered as late.

Late-payment interest covers the period running from the day following the due date for payment (see above), up to and including the date of payment.

Late-payment interest is not considered for the purposes of calculating the final grant amount.

**22.5.2** If the coordinator breaches any of its obligations under this Article, the grant may be reduced (see Article 29) and the grant or the coordinator may be terminated (see Article 32).

Such breaches may also lead to other measures described in Chapter 5.

## ARTICLE 23 — GUARANTEES

Not applicable

## ARTICLE 24 — CERTIFICATES

### 24.1 Operational verification report (OVR)

Not applicable

### 24.2 Certificate on the financial statements (CFS)

If required by the granting authority (see Data Sheet, Point 4.3), the beneficiaries must provide certificates on their financial statements (CFS), in accordance with the schedule, threshold and conditions set out in the Data Sheet.

The coordinator must submit them as part of the periodic report (see Article 21).

The certificates must be drawn up using the template published on the Portal, cover the costs declared on the basis of actual costs and costs according to usual cost accounting practices (if any), and fulfil the following conditions:

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- (a) be provided by a qualified approved external auditor which is independent and complies with Directive 2006/43/EC<sup>19</sup> (or for public bodies: by a competent independent public officer)
- (b) the verification must be carried out according to the highest professional standards to ensure that the financial statements comply with the provisions under the Agreement and that the costs declared are eligible.

The certificates will not affect the granting authority's right to carry out its own checks, reviews or audits, nor preclude the European Court of Auditors (ECA), the European Public Prosecutor's Office (EPPO) or the European Anti-Fraud Office (OLAF) from using their prerogatives for audits and investigations under the Agreement (see Article 25).

If the costs (or a part of them) were already audited by the granting authority, these costs do not need to be covered by the certificate and will not be counted for calculating the threshold (if any).

### 24.3 Certificate on the compliance of usual cost accounting practices (CoMUC)

Not applicable

### 24.4 Systems and process audit (SPA)

Beneficiaries which:

- use unit, flat rate or lump sum costs or contributions according to documented (i.e. formally approved and in writing) usual costs accounting practices (if any) or
- have formalised documentation on the systems and processes for calculating their costs and contributions (i.e. formally approved and in writing), have participated in at least 150 actions under Horizon 2020 or the Euratom Research and Training Programme (2014-2018 or 2019-2020) and participate in at least 3 ongoing actions under Horizon Europe or the Euratom Research and Training Programme (2021-2025 or 2026-2027)

may apply to the granting authority for a systems and process audit (SPA).

This audit will be carried out as follows:

- Step 1 – Application by the beneficiary.
- Step 2 – If the application is accepted, the granting authority will carry out the systems and process audit, complemented by an audit of transactions (on a sample of the beneficiary's Horizon Europe or the Euratom Research and Training Programme financial statements).
- Step 3 – The audit result will take the form of a risk assessment classification for the beneficiary: low, medium or high.

Low-risk beneficiaries will benefit from less (or less in-depth) ex-post audits (see Article 25) and a higher threshold for submitting certificates on the financial statements (CFS; see Articles 21 and 24.2 and Data Sheet, Point 4.3).

<sup>19</sup> Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts or similar national regulations (OJ L 157, 9.6.2006, p. 87).

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## 24.5 Consequences of non-compliance

If a beneficiary does not submit a certificate on the financial statements (CFS) or the certificate is rejected, the accepted EU contribution to costs will be capped to reflect the CFS threshold.

If a beneficiary breaches any of its other obligations under this Article, the granting authority may apply the measures described in Chapter 5.

## ARTICLE 25 — CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS — EXTENSION OF FINDINGS

### 25.1 Granting authority checks, reviews and audits

#### 25.1.1 Internal checks

The granting authority may — during the action or afterwards — check the proper implementation of the action and compliance with the obligations under the Agreement, including assessing costs and contributions, deliverables and reports.

#### 25.1.2 Project reviews

The granting authority may carry out reviews on the proper implementation of the action and compliance with the obligations under the Agreement (general project reviews or specific issues reviews).

Such project reviews may be started during the implementation of the action and until the time-limit set out in the Data Sheet (see Point 6). They will be formally notified to the coordinator or beneficiary concerned and will be considered to start on the date of the notification.

If needed, the granting authority may be assisted by independent, outside experts. If it uses outside experts, the coordinator or beneficiary concerned will be informed and have the right to object on grounds of commercial confidentiality or conflict of interest.

The coordinator or beneficiary concerned must cooperate diligently and provide — within the deadline requested — any information and data in addition to deliverables and reports already submitted (including information on the use of resources). The granting authority may request beneficiaries to provide such information to it directly. Sensitive information and documents will be treated in accordance with Article 13.

The coordinator or beneficiary concerned may be requested to participate in meetings, including with the outside experts.

For **on-the-spot visits**, the beneficiary concerned must allow access to sites and premises (including to the outside experts) and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the review findings, a **project review report** will be drawn up.

The granting authority will formally notify the project review report to the coordinator or beneficiary concerned, which has 30 days from receiving notification to make observations.

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Project reviews (including project review reports) will be in the language of the Agreement.

### 25.1.3 Audits

The granting authority may carry out audits on the proper implementation of the action and compliance with the obligations under the Agreement.

Such audits may be started during the implementation of the action and until the time-limit set out in the Data Sheet (see Point 6). They will be formally notified to the beneficiary concerned and will be considered to start on the date of the notification.

The granting authority may use its own audit service, delegate audits to a centralised service or use external audit firms. If it uses an external firm, the beneficiary concerned will be informed and have the right to object on grounds of commercial confidentiality or conflict of interest.

The beneficiary concerned must cooperate diligently and provide — within the deadline requested — any information (including complete accounts, individual salary statements or other personal data) to verify compliance with the Agreement. Sensitive information and documents will be treated in accordance with Article 13.

For **on-the-spot** visits, the beneficiary concerned must allow access to sites and premises (including for the external audit firm) and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the audit findings, a **draft audit report** will be drawn up.

The auditors will formally notify the draft audit report to the beneficiary concerned, which has 30 days from receiving notification to make observations (contradictory audit procedure).

The **final audit report** will take into account observations by the beneficiary concerned and will be formally notified to them.

Audits (including audit reports) will be in the language of the Agreement.

### 25.2 European Commission checks, reviews and audits in grants of other granting authorities

Where the granting authority is not the European Commission, the latter has the same rights of checks, reviews and audits as the granting authority.

### 25.3 Access to records for assessing simplified forms of funding

The beneficiaries must give the European Commission access to their statutory records for the periodic assessment of simplified forms of funding which are used in EU programmes.

### 25.4 OLAF, EPPO and ECA audits and investigations

The following bodies may also carry out checks, reviews, audits and investigations — during the action or afterwards:

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- the European Anti-Fraud Office (OLAF) under Regulations No 883/2013<sup>20</sup> and No 2185/96<sup>21</sup>
- the European Public Prosecutor's Office (EPPO) under Regulation 2017/1939
- the European Court of Auditors (ECA) under Article 287 of the Treaty on the Functioning of the EU (TFEU) and Article 257 of EU Financial Regulation 2018/1046.

If requested by these bodies, the beneficiary concerned must provide full, accurate and complete information in the format requested (including complete accounts, individual salary statements or other personal data, including in electronic format) and allow access to sites and premises for on-the-spot visits or inspections — as provided for under these Regulations.

To this end, the beneficiary concerned must keep all relevant information relating to the action, at least until the time-limit set out in the Data Sheet (Point 6) and, in any case, until any ongoing checks, reviews, audits, investigations, litigation or other pursuits of claims have been concluded.

## **25.5 Consequences of checks, reviews, audits and investigations — Extension of results of reviews, audits or investigations**

### **25.5.1 Consequences of checks, reviews, audits and investigations in this grant**

Findings in checks, reviews, audits or investigations carried out in the context of this grant may lead to rejections (see Article 27), grant reduction (see Article 28) or other measures described in Chapter 5.

Rejections or grant reductions after the final payment will lead to a revised final grant amount (see Article 22).

Findings in checks, reviews, audits or investigations during the action implementation may lead to a request for amendment (see Article 39), to change the description of the action set out in Annex 1.

Checks, reviews, audits or investigations that find systemic or recurrent errors, irregularities, fraud or breach of obligations in any EU grant may also lead to consequences in other EU grants awarded under similar conditions ('extension to other grants').

Moreover, findings arising from an OLAF or EPPO investigation may lead to criminal prosecution under national law.

### **25.5.2 Extension from other grants**

Results of checks, reviews, audits or investigations in other grants may be extended to this grant, if:

- (a) the beneficiary concerned is found, in other EU grants awarded under similar conditions, to have committed systemic or recurrent errors, irregularities, fraud or breach of obligations that have a material impact on this grant and

<sup>20</sup> Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999 (OJ L 248, 18/09/2013, p. 1).

<sup>21</sup> Council Regulation (Euratom, EC) No 2185/1996 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L 292, 15/11/1996, p. 2).

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- (b) those findings are formally notified to the beneficiary concerned — together with the list of grants affected by the findings — within the time-limit for audits set out in the Data Sheet (see Point 6).

The granting authority will formally notify the beneficiary concerned of the intention to extend the findings and the list of grants affected.

If the extension concerns **rejections of costs or contributions**: the notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings
- (b) the request to submit revised financial statements for all grants affected
- (c) the correction rate for extrapolation, established on the basis of the systemic or recurrent errors, to calculate the amounts to be rejected, if the beneficiary concerned:
  - (i) considers that the submission of revised financial statements is not possible or practicable or
  - (ii) does not submit revised financial statements.

If the extension concerns **grant reductions**: the notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings and
- (b) the **correction rate for extrapolation**, established on the basis of the systemic or recurrent errors and the principle of proportionality.

The beneficiary concerned has **60 days** from receiving notification to submit observations, revised financial statements or to propose a duly substantiated **alternative correction method/rate**.

On the basis of this, the granting authority will analyse the impact and decide on the implementation (i.e. start rejection or grant reduction procedures, either on the basis of the revised financial statements or the announced/alternative method/rate or a mix of those; see Articles 27 and 28).

## 25.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, costs or contributions insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 27), and the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

## ARTICLE 26 — IMPACT EVALUATIONS

### 26.1 Impact evaluation

The granting authority may carry out impact evaluations of the action, measured against the objectives and indicators of the EU programme funding the grant.

Such evaluations may be started during implementation of the action and until the time-limit set out

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in the Data Sheet (see Point 6). They will be formally notified to the coordinator or beneficiaries and will be considered to start on the date of the notification.

If needed, the granting authority may be assisted by independent outside experts.

The coordinator or beneficiaries must provide any information relevant to evaluate the impact of the action, including information in electronic format.

## **26.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the granting authority may apply the measures described in Chapter 5.

# **CHAPTER 5 CONSEQUENCES OF NON-COMPLIANCE**

## **SECTION 1 REJECTIONS AND GRANT REDUCTION**

### **ARTICLE 27 — REJECTION OF COSTS AND CONTRIBUTIONS**

#### **27.1 Conditions**

The granting authority will — at beneficiary termination, interim payment, final payment or afterwards — reject any costs or contributions which are ineligible (see Article 6), in particular following checks, reviews, audits or investigations (see Article 25).

The rejection may also be based on the extension of findings from other grants to this grant (see Article 25).

Ineligible costs or contributions will be rejected.

#### **27.2 Procedure**

If the rejection does not lead to a recovery, the granting authority will formally notify the coordinator or beneficiary concerned of the rejection, the amounts and the reasons why. The coordinator or beneficiary concerned may — within 30 days of receiving notification — submit observations if it disagrees with the rejection (payment review procedure).

If the rejection leads to a recovery, the granting authority will follow the contradictory procedure with pre-information letter set out in Article 22.

#### **27.3 Effects**

If the granting authority rejects costs or contributions, it will deduct them from the costs or contributions declared and then calculate the amount due (and, if needed, make a recovery; see Article 22).

### **ARTICLE 28 — GRANT REDUCTION**

#### **28.1 Conditions**



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The granting authority may — at beneficiary termination, final payment or afterwards — reduce the grant for a beneficiary, if:

- (a) the beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed:
  - (i) substantial errors, irregularities or fraud or
  - (ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.), or
- (b) the beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (see Article 25).

The amount of the reduction will be calculated for each beneficiary concerned and proportionate to the seriousness and the duration of the errors, irregularities or fraud or breach of obligations, by applying an individual reduction rate to their accepted EU contribution.

## **28.2 Procedure**

If the grant reduction does not lead to a recovery, the granting authority will formally notify the coordinator or beneficiary concerned of the reduction, the amount to be reduced and the reasons why. The coordinator or beneficiary concerned may — within 30 days of receiving notification — submit observations if it disagrees with the reduction (payment review procedure).

If the grant reduction leads to a recovery, the granting authority will follow the contradictory procedure with pre-information letter set out in Article 22.

## **28.3 Effects**

If the granting authority reduces the grant, it will deduct the reduction and then calculate the amount due (and, if needed, make a recovery; see Article 22).

## **SECTION 2 SUSPENSION AND TERMINATION**

### **ARTICLE 29 — PAYMENT DEADLINE SUSPENSION**

#### **29.1 Conditions**

The granting authority may — at any moment — suspend the payment deadline if a payment cannot be processed because:

- (a) the required report (see Article 21) has not been submitted or is not complete or additional information is needed
- (b) there are doubts about the amount to be paid (e.g. ongoing audit extension procedure, queries

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about eligibility, need for a grant reduction, etc.) and additional checks, reviews, audits or investigations are necessary, or

(c) there are other issues affecting the EU financial interests.

## 29.2 Procedure

The granting authority will formally notify the coordinator of the suspension and the reasons why.

The suspension will **take effect** the day the notification is sent.

If the conditions for suspending the payment deadline are no longer met, the suspension will be **lifted** — and the remaining time to pay (see Data Sheet, Point 4.2) will resume.

If the suspension exceeds two months, the coordinator may request the granting authority to confirm if the suspension will continue.

If the payment deadline has been suspended due to the non-compliance of the report and the revised report is not submitted (or was submitted but is also rejected), the granting authority may also terminate the grant or the participation of the coordinator (see Article 32).

## ARTICLE 30 — PAYMENT SUSPENSION

### 30.1 Conditions

The granting authority may — at any moment — suspend payments, in whole or in part for one or more beneficiaries, if:

- (a) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed or is suspected of having committed:
  - (i) substantial errors, irregularities or fraud or
  - (ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.), or
- (b) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant.

If payments are suspended for one or more beneficiaries, the granting authority will make partial payment(s) for the part(s) not suspended. If suspension concerns the final payment, the payment (or recovery) of the remaining amount after suspension is lifted will be considered to be the payment that closes the action.

### 30.2 Procedure

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Before suspending payments, the granting authority will send a **pre-information letter** to the beneficiary concerned:

- formally notifying the intention to suspend payments and the reasons why and
- requesting observations within 30 days of receiving notification.

If the granting authority does not receive observations or decides to pursue the procedure despite the observations it has received, it will confirm the suspension (**confirmation letter**). Otherwise, it will formally notify that the procedure is discontinued.

At the end of the suspension procedure, the granting authority will also inform the coordinator.

The suspension will **take effect** the day after the confirmation notification is sent.

If the conditions for resuming payments are met, the suspension will be **lifted**. The granting authority will formally notify the beneficiary concerned (and the coordinator) and set the suspension end date.

During the suspension, no prefinancing will be paid to the beneficiaries concerned. For interim payments, the periodic reports for all reporting periods except the last one (see Article 21) must not contain any financial statements from the beneficiary concerned (or its affiliated entities). The coordinator must include them in the next periodic report after the suspension is lifted or — if suspension is not lifted before the end of the action — in the last periodic report.

## ARTICLE 31 — GRANT AGREEMENT SUSPENSION

### 31.1 Consortium-requested GA suspension

#### 31.1.1 Conditions and procedure

The beneficiaries may request the suspension of the grant or any part of it, if exceptional circumstances — in particular *force majeure* (see Article 35) — make implementation impossible or excessively difficult.

The coordinator must submit a request for **amendment** (see Article 39), with:

- the reasons why
- the date the suspension takes effect; this date may be before the date of the submission of the amendment request and
- the expected date of resumption.

The suspension will **take effect** on the day specified in the amendment.

Once circumstances allow for implementation to resume, the coordinator must immediately request another **amendment** of the Agreement to set the suspension end date, the resumption date (one day after suspension end date), extend the duration and make other changes necessary to adapt the action to the new situation (see Article 39) — unless the grant has been terminated (see Article 32). The suspension will be **lifted** with effect from the suspension end date set out in the amendment. This date may be before the date of the submission of the amendment request.

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During the suspension, no prefinancing will be paid. Costs incurred or contributions for activities implemented during grant suspension are not eligible (see Article 6.3).

## 31.2 EU-initiated GA suspension

### 31.2.1 Conditions

The granting authority may suspend the grant or any part of it, if:

- (a) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed or is suspected of having committed:
  - (i) substantial errors, irregularities or fraud or
  - (ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.), or
- (b) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant
- (c) other:
  - (i) linked action issues: not applicable
  - (ii) the action has lost its scientific or technological relevance, for EIC Accelerator actions: the action has lost its economic relevance, for challenge-based EIC Pathfinder actions and Horizon Europe Missions: the action has lost its relevance as part of the Portfolio for which it has been initially selected

### 31.2.2 Procedure

Before suspending the grant, the granting authority will send a **pre-information letter** to the coordinator:

- formally notifying the intention to suspend the grant and the reasons why and
- requesting observations within 30 days of receiving notification.

If the granting authority does not receive observations or decides to pursue the procedure despite the observations it has received, it will confirm the suspension (**confirmation letter**). Otherwise, it will formally notify that the procedure is discontinued.

The suspension will **take effect** the day after the confirmation notification is sent (or on a later date specified in the notification).

Once the conditions for resuming implementation of the action are met, the granting authority will formally notify the coordinator a **lifting of suspension letter**, in which it will set the suspension end date and invite the coordinator to request an amendment of the Agreement to set the resumption

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date (one day after suspension end date), extend the duration and make other changes necessary to adapt the action to the new situation (see Article 39) — unless the grant has been terminated (see Article 32). The suspension will be **lifted** with effect from the suspension end date set out in the lifting of suspension letter. This date may be before the date on which the letter is sent.

During the suspension, no prefinancing will be paid. Costs incurred or contributions for activities implemented during suspension are not eligible (see Article 6.3).

The beneficiaries may not claim damages due to suspension by the granting authority (see Article 33).

Grant suspension does not affect the granting authority's right to terminate the grant or a beneficiary (see Article 32) or reduce the grant (see Article 28).

## ARTICLE 32 — GRANT AGREEMENT OR BENEFICIARY TERMINATION

### 32.1 Consortium-requested GA termination

#### 32.1.1 Conditions and procedure

The beneficiaries may request the termination of the grant.

The coordinator must submit a request for **amendment** (see Article 39), with:

- the reasons why
- the date the consortium ends work on the action ('end of work date') and
- the date the termination takes effect ('termination date'); this date must be after the date of the submission of the amendment request.

The termination will **take effect** on the termination date specified in the amendment.

If no reasons are given or if the granting authority considers the reasons do not justify termination, it may consider the grant terminated improperly.

#### 32.1.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit a **periodic report** (for the open reporting period until termination).

The granting authority will calculate the final grant amount and final payment on the basis of the report submitted and taking into account the costs incurred and contributions for activities implemented before the end of work date (see Article 22). Costs relating to contracts due for execution only after the end of work are not eligible.

If the granting authority does not receive the report within the deadline, only costs and contributions which are included in an approved periodic report will be taken into account (no costs/contributions if no periodic report was ever approved).

Improper termination may lead to a grant reduction (see Article 28).

After termination, the beneficiaries' obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks,

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reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

## 32.2 Consortium-requested beneficiary termination

### 32.2.1 Conditions and procedure

The coordinator may request the termination of the participation of one or more beneficiaries, on request of the beneficiary concerned or on behalf of the other beneficiaries.

The coordinator must submit a request for **amendment** (see Article 39), with:

- the reasons why
- the opinion of the beneficiary concerned (or proof that this opinion has been requested in writing)
- the date the beneficiary ends work on the action ('end of work date')
- the date the termination takes effect ('termination date'); this date must be after the date of the submission of the amendment request.

If the termination concerns the coordinator and is done without its agreement, the amendment request must be submitted by another beneficiary (acting on behalf of the consortium).

The termination will **take effect** on the termination date specified in the amendment.

If no information is given or if the granting authority considers that the reasons do not justify termination, it may consider the beneficiary to have been terminated improperly.

### 32.2.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a **report on the distribution of payments** to the beneficiary concerned
- (ii) a **termination report** from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, the financial statement, the explanation on the use of resources, and, if applicable, the certificate on the financial statement (CFS; see Articles 21 and 24.2 and Data Sheet, Point 4.3)
- (iii) a second **request for amendment** (see Article 39) with other amendments needed (e.g. reallocation of the tasks and the estimated budget of the terminated beneficiary; addition of a new beneficiary to replace the terminated beneficiary; change of coordinator, etc.).

The granting authority will calculate the amount due to the beneficiary on the basis of the report submitted and taking into account the costs incurred and contributions for activities implemented before the end of work date (see Article 22). Costs relating to contracts due for execution only after the end of work are not eligible.

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 21).

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If the granting authority does not receive the termination report within the deadline, only costs and contributions which are included in an approved periodic report will be taken into account (no costs/contributions if no periodic report was ever approved).

If the granting authority does not receive the report on the distribution of payments within the deadline, it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

If the second request for amendment is accepted by the granting authority, the Agreement is **amended** to introduce the necessary changes (see Article 39).

If the second request for amendment is rejected by the granting authority (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the grant may be terminated (see Article 32).

Improper termination may lead to a reduction of the grant (see Article 31) or grant termination (see Article 32).

After termination, the concerned beneficiary's obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

### **32.3 EU-initiated GA or beneficiary termination**

#### **32.3.1 Conditions**

The granting authority may terminate the grant or the participation of one or more beneficiaries, if:

- (a) one or more beneficiaries do not accede to the Agreement (see Article 40)
- (b) a change to the action or the legal, financial, technical, organisational or ownership situation of a beneficiary is likely to substantially affect the implementation of the action or calls into question the decision to award the grant (including changes linked to one of the exclusion grounds listed in the declaration of honour)
- (c) following termination of one or more beneficiaries, the necessary changes to the Agreement (and their impact on the action) would call into question the decision awarding the grant or breach the principle of equal treatment of applicants
- (d) implementation of the action has become impossible or the changes necessary for its continuation would call into question the decision awarding the grant or breach the principle of equal treatment of applicants
- (e) a beneficiary (or person with unlimited liability for its debts) is subject to bankruptcy proceedings or similar (including insolvency, winding-up, administration by a liquidator or court, arrangement with creditors, suspension of business activities, etc.)

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- (f) a beneficiary (or person with unlimited liability for its debts) is in breach of social security or tax obligations
- (g) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has been found guilty of grave professional misconduct
- (h) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed fraud, corruption, or is involved in a criminal organisation, money laundering, terrorism-related crimes (including terrorism financing), child labour or human trafficking
- (i) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) was created under a different jurisdiction with the intent to circumvent fiscal, social or other legal obligations in the country of origin (or created another entity with this purpose)
- (j) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed:
  - (i) substantial errors, irregularities or fraud or
  - (ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.)
- (k) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (extension of findings from other grants to this grant; see Article 25)
- (l) despite a specific request by the granting authority, a beneficiary does not request — through the coordinator — an amendment to the Agreement to end the participation of one of its affiliated entities or associated partners that is in one of the situations under points (d), (f), (e), (g), (h), (i) or (j) and to reallocate its tasks, or
- (m) other:
  - (i) linked action issues: not applicable
  - (ii) the action has lost its scientific or technological relevance, for EIC Accelerator actions: the action has lost its economic relevance, for challenge-based EIC Pathfinder actions and Horizon Europe Missions: the action has lost its relevance as part of the Portfolio for which it has been initially selected

### 32.3.2 Procedure

Before terminating the grant or participation of one or more beneficiaries, the granting authority will send a **pre-information letter** to the coordinator or beneficiary concerned:



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- formally notifying the intention to terminate and the reasons why and
- requesting observations within 30 days of receiving notification.

If the granting authority does not receive observations or decides to pursue the procedure despite the observations it has received, it will confirm the termination and the date it will take effect (**confirmation letter**). Otherwise, it will formally notify that the procedure is discontinued.

For beneficiary terminations, the granting authority will — at the end of the procedure — also inform the coordinator.

The termination will **take effect** the day after the confirmation notification is sent (or on a later date specified in the notification; ‘termination date’).

### 32.3.3 Effects

#### (a) for **GA termination**:

The coordinator must — within 60 days from when termination takes effect — submit a **periodic report** (for the last open reporting period until termination).

The granting authority will calculate the final grant amount and final payment on the basis of the report submitted and taking into account the costs incurred and contributions for activities implemented before termination takes effect (see Article 22). Costs relating to contracts due for execution only after termination are not eligible.

If the grant is terminated for breach of the obligation to submit reports, the coordinator may not submit any report after termination.

If the granting authority does not receive the report within the deadline, only costs and contributions which are included in an approved periodic report will be taken into account (no costs/contributions if no periodic report was ever approved).

Termination does not affect the granting authority’s right to reduce the grant (see Article 28) or to impose administrative sanctions (see Article 34).

The beneficiaries may not claim damages due to termination by the granting authority (see Article 33).

After termination, the beneficiaries’ obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

#### (b) for **beneficiary termination**:

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a **report on the distribution of payments** to the beneficiary concerned
- (ii) a **termination report** from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, the financial

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statement, the explanation on the use of resources, and, if applicable, the certificate on the financial statement (CFS; see Articles 21 and 24.2 and Data Sheet, Point 4.3)

- (iii) a **request for amendment** (see Article 39) with any amendments needed (e.g. reallocation of the tasks and the estimated budget of the terminated beneficiary; addition of a new beneficiary to replace the terminated beneficiary; change of coordinator, etc.).

The granting authority will calculate the amount due to the beneficiary on the basis of the report submitted and taking into account the costs incurred and contributions for activities implemented before termination takes effect (see Article 22). Costs relating to contracts due for execution only after termination are not eligible.

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 21).

If the granting authority does not receive the termination report within the deadline, only costs and contributions included in an approved periodic report will be taken into account (no costs/contributions if no periodic report was ever approved).

If the granting authority does not receive the report on the distribution of payments within the deadline, it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

If the request for amendment is accepted by the granting authority, the Agreement is **amended** to introduce the necessary changes (see Article 39).

If the request for amendment is rejected by the granting authority (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the grant may be terminated (see Article 32).

After termination, the concerned beneficiary's obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

## **SECTION 3 OTHER CONSEQUENCES: DAMAGES AND ADMINISTRATIVE SANCTIONS**

### **ARTICLE 33 — DAMAGES**

#### **33.1 Liability of the granting authority**

The granting authority cannot be held liable for any damage caused to the beneficiaries or to third parties as a consequence of the implementation of the Agreement, including for gross negligence.

The granting authority cannot be held liable for any damage caused by any of the beneficiaries or other participants involved in the action, as a consequence of the implementation of the Agreement.

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### **33.2 Liability of the beneficiaries**

The beneficiaries must compensate the granting authority for any damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement, provided that it was caused by gross negligence or wilful act.

The liability does not extend to indirect or consequential losses or similar damage (such as loss of profit, loss of revenue or loss of contracts), provided such damage was not caused by wilful act or by a breach of confidentiality.

## **ARTICLE 34 — ADMINISTRATIVE SANCTIONS AND OTHER MEASURES**

Nothing in this Agreement may be construed as preventing the adoption of administrative sanctions (i.e. exclusion from EU award procedures and/or financial penalties) or other public law measures, in addition or as an alternative to the contractual measures provided under this Agreement (see, for instance, Articles 135 to 145 EU Financial Regulation 2018/1046 and Articles 4 and 7 of Regulation 2988/95<sup>22</sup>).

## **SECTION 4 FORCE MAJEURE**

### **ARTICLE 35 — FORCE MAJEURE**

A party prevented by force majeure from fulfilling its obligations under the Agreement cannot be considered in breach of them.

‘Force majeure’ means any situation or event that:

- prevents either party from fulfilling their obligations under the Agreement,
- was unforeseeable, exceptional situation and beyond the parties’ control,
- was not due to error or negligence on their part (or on the part of other participants involved in the action), and
- proves to be inevitable in spite of exercising all due diligence.

Any situation constituting force majeure must be formally notified to the other party without delay, stating the nature, likely duration and foreseeable effects.

The parties must immediately take all the necessary steps to limit any damage due to force majeure and do their best to resume implementation of the action as soon as possible.

## **CHAPTER 6 FINAL PROVISIONS**

### **ARTICLE 36 — COMMUNICATION BETWEEN THE PARTIES**

#### **36.1 Forms and means of communication — Electronic management**

<sup>22</sup> Council Regulation (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests (OJ L 312, 23.12.1995, p. 1).

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EU grants are managed fully electronically through the EU Funding & Tenders Portal ('Portal').

All communications must be made electronically through the Portal, in accordance with the Portal Terms and Conditions and using the forms and templates provided there (except if explicitly instructed otherwise by the granting authority).

Communications must be made in writing and clearly identify the grant agreement (project number and acronym).

Communications must be made by persons authorised according to the Portal Terms and Conditions. For naming the authorised persons, each beneficiary must have designated — before the signature of this Agreement — a 'legal entity appointed representative (LEAR)'. The role and tasks of the LEAR are stipulated in their appointment letter (see Portal Terms and Conditions).

If the electronic exchange system is temporarily unavailable, instructions will be given on the Portal.

### **36.2 Date of communication**

The sending date for communications made through the Portal will be the date and time of sending, as indicated by the time logs.

The receiving date for communications made through the Portal will be the date and time the communication is accessed, as indicated by the time logs. Formal notifications that have not been accessed within 10 days after sending, will be considered to have been accessed (see Portal Terms and Conditions).

If a communication is exceptionally made on paper (by e-mail or postal service), general principles apply (i.e. date of sending/receipt). Formal notifications by registered post with proof of delivery will be considered to have been received either on the delivery date registered by the postal service or the deadline for collection at the post office.

If the electronic exchange system is temporarily unavailable, the sending party cannot be considered in breach of its obligation to send a communication within a specified deadline.

### **36.3 Addresses for communication**

The Portal can be accessed via the Europa website.

The address for paper communications to the granting authority (if exceptionally allowed) is the official mailing address indicated on its website.

For beneficiaries, it is the legal address specified in the Portal Participant Register.

## **ARTICLE 37 — INTERPRETATION OF THE AGREEMENT**

The provisions in the Data Sheet take precedence over the rest of the Terms and Conditions of the Agreement.

Annex 5 takes precedence over the Terms and Conditions; the Terms and Conditions take precedence over the Annexes other than Annex 5.

Annex 2 takes precedence over Annex 1.

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## ARTICLE 38 — CALCULATION OF PERIODS AND DEADLINES

In accordance with Regulation No 1182/71<sup>23</sup>, periods expressed in days, months or years are calculated from the moment the triggering event occurs.

The day during which that event occurs is not considered as falling within the period.

‘Days’ means calendar days, not working days.

## ARTICLE 39 — AMENDMENTS

### 39.1 Conditions

The Agreement may be amended, unless the amendment entails changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

Amendments may be requested by any of the parties.

### 39.2 Procedure

The party requesting an amendment must submit a request for amendment signed directly in the Portal Amendment tool.

The coordinator submits and receives requests for amendment on behalf of the beneficiaries (see Annex 3). If a change of coordinator is requested without its agreement, the submission must be done by another beneficiary (acting on behalf of the other beneficiaries).

The request for amendment must include:

- the reasons why
- the appropriate supporting documents and
- for a change of coordinator without its agreement: the opinion of the coordinator (or proof that this opinion has been requested in writing).

The granting authority may request additional information.

If the party receiving the request agrees, it must sign the amendment in the tool within 45 days of receiving notification (or any additional information the granting authority has requested). If it does not agree, it must formally notify its disagreement within the same deadline. The deadline may be extended, if necessary for the assessment of the request. If no notification is received within the deadline, the request is considered to have been rejected.

An amendment **enters into force** on the day of the signature of the receiving party.

An amendment **takes effect** on the date of entry into force or other date specified in the amendment.

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<sup>23</sup> Regulation (EEC, Euratom) No 1182/71 of the Council of 3 June 1971 determining the rules applicable to periods, dates and time-limits (OJ L 124, 8/6/1971, p. 1).

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## **ARTICLE 40 — ACCESSION AND ADDITION OF NEW BENEFICIARIES**

### **40.1 Accession of the beneficiaries mentioned in the Preamble**

The beneficiaries which are not coordinator must accede to the grant by signing the accession form (see Annex 3) directly in the Portal Grant Preparation tool, within 30 days after the entry into force of the Agreement (see Article 44).

They will assume the rights and obligations under the Agreement with effect from the date of its entry into force (see Article 44).

If a beneficiary does not accede to the grant within the above deadline, the coordinator must — within 30 days — request an amendment (see Article 39) to terminate the beneficiary and make any changes necessary to ensure proper implementation of the action. This does not affect the granting authority's right to terminate the grant (see Article 32).

### **40.2 Addition of new beneficiaries**

In justified cases, the beneficiaries may request the addition of a new beneficiary.

For this purpose, the coordinator must submit a request for amendment in accordance with Article 39. It must include an accession form (see Annex 3) signed by the new beneficiary directly in the Portal Amendment tool.

New beneficiaries will assume the rights and obligations under the Agreement with effect from the date of their accession specified in the accession form (see Annex 3).

Additions are also possible in mono-beneficiary grants.

## **ARTICLE 41 — TRANSFER OF THE AGREEMENT**

In justified cases, the beneficiary of a mono-beneficiary grant may request the transfer of the grant to a new beneficiary, provided that this would not call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiary must submit a request for **amendment** (see Article 39), with

- the reasons why
- the accession form (see Annex 3) signed by the new beneficiary directly in the Portal Amendment tool and
- additional supporting documents (if required by the granting authority).

The new beneficiary will assume the rights and obligations under the Agreement with effect from the date of accession specified in the accession form (see Annex 3).

## **ARTICLE 42 — ASSIGNMENTS OF CLAIMS FOR PAYMENT AGAINST THE GRANTING AUTHORITY**

The beneficiaries may not assign any of their claims for payment against the granting authority to

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any third party, except if expressly approved in writing by the granting authority on the basis of a reasoned, written request by the coordinator (on behalf of the beneficiary concerned).

If the granting authority has not accepted the assignment or if the terms of it are not observed, the assignment will have no effect on it.

In no circumstances will an assignment release the beneficiaries from their obligations towards the granting authority.

## **ARTICLE 43 — APPLICABLE LAW AND SETTLEMENT OF DISPUTES**

### **43.1 Applicable law**

The Agreement is governed by the applicable EU law, supplemented if necessary by the law of Belgium.

Special rules may apply for beneficiaries which are international organisations (if any; see Data Sheet, Point 5).

### **43.2 Dispute settlement**

If a dispute concerns the interpretation, application or validity of the Agreement, the parties must bring action before the EU General Court — or, on appeal, the EU Court of Justice — under Article 272 of the Treaty on the Functioning of the EU (TFEU).

For non-EU beneficiaries (if any), such disputes must be brought before the courts of Brussels, Belgium — unless an international agreement provides for the enforceability of EU court judgements.

For beneficiaries with arbitration as special dispute settlement forum (if any; see Data Sheet, Point 5), the dispute will — in the absence of an amicable settlement — be settled in accordance with the Rules for Arbitration published on the Portal.

If a dispute concerns administrative sanctions, offsetting or an enforceable decision under Article 299 TFEU (see Articles 22 and 34), the beneficiaries must bring action before the General Court — or, on appeal, the Court of Justice — under Article 263 TFEU.

For grants where the granting authority is an EU executive agency (see Preamble), actions against offsetting and enforceable decisions must be brought against the European Commission (not against the granting authority; see also Article 22).

## **ARTICLE 44 — ENTRY INTO FORCE**

The Agreement will enter into force on the day of signature by the granting authority or the coordinator, depending on which is later.

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## SIGNATURES

### For the coordinator

Kai Schroeter with ECAS id n009t1ep signed in the Participant Portal on 07/09/2022 at 14:47:35 (transaction id SigId-23224-VK4WNSQDCjKdOyXp9J2VrnfGaiLwc51AEVrsYTbusYGyd1XfLcAXKWBU2tU7sjzqmdeozleB7G9GBHPJDAQzYeG-rS0vSrmBGYCyqUuASzZuFeW-jEeirUIHL3hoIclLGGIvsa15XYrxCQiGnzdDIEzXjo0BHbzZGU1nxzJsv336vf2fRPzI8CpKzfDIOv08k10VtW). Timestamp by third party at 2022.09.07 15:47:43 CEST

### For the granting authority

Signed by Valeria BRICOLA with ECAS id bricova as an authorised representative on 09-09-2022 12:17:02 (transaction id SigId-44760-DZ4thRvdgWZdCnVX90zlAcqGazGckAuoNaqYEuWLhOsgGITGjvrzkyzwQYuv0liTzyRIWVGZivE0OhBrFATAcUe7-rS0vSrmBGYCyqUuASzZuFeW-EsEYPpWeMzu1zQypzWw2JZklhPzuCCbCy45zXzecVbjSeLQ7wW7XnHB LcvtMRQhzKnvbaelt7IOc96FUyzaRHLqe) 2022.09.09 12:17:06 CEST





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## ANNEX 1



## **Horizon Europe (HORIZON)**

### **Description of the action (DoA)**

**Part A**

**Part B**

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## DESCRIPTION OF THE ACTION (PART A)

### COVER PAGE

*Part A of the Description of the Action (DoA) must be completed directly on the Portal Grant Preparation screens.*

<b>PROJECT</b>	
<i>Grant Preparation (General Information screen) — Enter the info.</i>	
<b>Project number:</b>	101073978
<b>Project name:</b>	Disaster Resilience for Extreme Climate Events providing interoperable Data, models, communication and governance
<b>Project acronym:</b>	DIRECTED
<b>Call:</b>	HORIZON-CL3-2021-DRS-01
<b>Topic:</b>	HORIZON-CL3-2021-DRS-01-02
<b>Type of action:</b>	HORIZON-IA
<b>Service:</b>	REA/C/02
<b>Project starting date:</b>	fixed date: 1 October 2022
<b>Project duration:</b>	48 months

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## PROJECT SUMMARY

### Project summary

*Grant Preparation (General Information screen) — Provide an overall description of your project (including context and overall objectives, planned activities and main achievements, and expected results and impacts (on target groups, change procedures, capacities, innovation etc)). This summary should give readers a clear idea of what your project is about.*

*Use the project summary from your proposal.*

The recent droughts in central Europe and unprecedented floods in central Europe have disclosed our vulnerability to extreme weather events. Besides climate change as a driver of more frequent and intensifying weather extremes, demographic change and socio-economic development exacerbate severe impacts. International frameworks for disaster risk reduction and climate change adaptation (e.g. SENDAI framework, EU Strategy on adaptation to climate change) acknowledge the critical need for integrating risk governance, communication and operational mechanisms for coping with extreme climate events throughout the entire Disaster Risk Management cycle. DIRECTED aspires to foster disaster-resilient European societies by expanding our capabilities to communicate, utilise and exchange state-of-the-art data, information and knowledge between different actors; boosting the integration, accessibility and interoperability of models; facilitating knowledge sharing; improving dialogue and cooperation encompassing all levels of actors based on enhanced community engagement and developing new governance and risk management strategies using a bottom-up, value-driven co-development approach. Key to supporting interoperability will be the establishment of the DATA-FABRIC, an innovative, governed, cloud platform that enables secure, flexible, discovery and sharing of all structured and unstructured data. Central to DIRECTED are four Real World Labs that co-develop new governance, interoperability and knowledge production frameworks and demonstrate their benefits for enhanced disaster risk governance supported by innovative technical frameworks to access, transform and integrate data and models into customised workflows for creating actionable solutions. The Real World Labs ensure the project continuously and actively involves key stakeholders in the co-development process and address topical problems of multi-hazard risk management and climate change adaptation to maximise impacts.

## LIST OF PARTICIPANTS

### PARTICIPANTS

*Grant Preparation (Beneficiaries screen) — Enter the info.*

Number	Role	Short name	Legal name	Country	PIC
1	COO	TUBS	TECHNISCHE UNIVERSITAET BRAUNSCHWEIG	DE	999861257
2	BEN	PIK	POTSDAM-INSTITUT FUR KLIMAFOLGENFORSCHUNG EV	DE	999464042
3	BEN	DTU	DANMARKS TEKNISKE UNIVERSITET	DK	999990655
4	BEN	GECO	GECOSISTEMA SRL	IT	959248327
5	BEN	IASS	INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES EV	DE	960542404
6	BEN	UCC	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE	999975717
7	BEN	REGIONH	REGION HOVEDSTADEN	DK	999654744
8	BEN	ARSTPC-ER	AGENZIA REGIONALE PER LA SICUREZZATERRITORIALE E LA PROTEZIONE CIVILE	IT	998349803
9	BEN	G&C	GENILLARD & CO GMBH	DE	920168870

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<b>PARTICIPANTS</b>					
<i>Grant Preparation (Beneficiaries screen) — Enter the info.</i>					
<b>Number</b>	<b>Role</b>	<b>Short name</b>	<b>Legal name</b>	<b>Country</b>	<b>PIC</b>
10	BEN	IIASA	INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE	AT	999452596
11	BEN	EV	ERFTVERBAND	DE	939668974
12	BEN	ZSRT	ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET	HU	888552981
13	BEN	ARPAE	AGENZIA REGIONALE PER LA PREVENZIONE, L'AMBIENTE E L'ENERGIA DELL'EMILIA-ROMAGNA	IT	999454633
14	BEN	GFZ	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ	DE	999994341
15	BEN	52N	52 NORTH SPATIAL INFORMATION RESEARCH GMBH	DE	997237407
16	AP	ETH	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH	999979015
17	AP	OASIS	OASIS HUB LIMITED	UK	906361308
18	AP	SEI	SEI OXFORD OFFICE LIMITED	UK	998830535

## LIST OF WORK PACKAGES

Work packages						
<i>Grant Preparation (Work Packages screen) — Enter the info.</i>						
Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
WP1	Real World Labs (RWL)	4 - GECCO	204.00	1	48	D1.1 – RWL description and set-up D1.2 – Capacity development strategy for Training of Trainers on implementing transdisciplinary knowledge co-production processes in the RWL D1.3 – Case studies of DRR/ CCA processes to date - forensic examination of real world process and events management D1.4 – Outcomes from RWL in multi-risk governance
WP2	Data and Model Interoperability	14 - GFZ	118.00	1	48	D2.1 – Compendium on data standards for interoperability in DRR and CCA D2.2 – Enhanced interoperability of tools available to users through software repository and documentation D2.3 – Interoperability demonstration factheets (description and illustration of workflow implementations in RWL as best practice examples)
WP3	Governance	5 - IASS	95.00	1	48	D3.1 – RISK-TANDEM Framework D3.2 – Updated RISK-TANDEM Framework for governance processes and interoperability D3.3 – Policy brief on risk governance in the context of DRR and CCA D3.4 – Guidance on good practices regarding interoperability of governance

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<b>Work packages</b>						
<i>Grant Preparation (Work Packages screen) — Enter the info.</i>						
<b>Work Package No</b>	<b>Work Package name</b>	<b>Lead Beneficiary</b>	<b>Effort (Person-Months)</b>	<b>Start Month</b>	<b>End Month</b>	<b>Deliverables</b>
WP4	Supporting information interoperability through transdisciplinary knowledge co-production processes	18 - SEI	72.00	1	48	D4.1 – Capacity development modules for ToT workshops in designing transdisciplinary knowledge co-production processes D4.2 – Framework for distilling assumptions in different modelling approaches with recommendations for replicating this approach D4.3 – Updated (tested & refined) TANDDEM cycle for transdisciplinary knowledge co-production processes and information interoperability
WP5	Data fabric	15 - S2N	55.00	1	48	D5.1 – High Level Design Document - Data Fabric D5.2 – Low Level Design Document Data Fabric D5.3 – Data Protection Impact Assessment D5.4 – Implementation documentation (e.g. planning, test/acceptance, training, user guides) D5.5 – Data Fabric Service Platform including configured RWL Interoperability Use Cases. D5.6 – Change Control documents D5.7 – User training by role (UCC) link to WP6 eLearning platform

<b>Work packages</b>						
<i>Grant Preparation (Work Packages screen) — Enter the info.</i>						
<b>Work Package No</b>	<b>Work Package name</b>	<b>Lead Beneficiary</b>	<b>Effort (Person-Months)</b>	<b>Start Month</b>	<b>End Month</b>	<b>Deliverables</b>
WP6	Communications, dissemination, exploitation and Impact	17 - OASIS	82.00	1	48	D6.1 – Communications Strategy D6.2 – Communications report 1 D6.3 – Gaps and Opportunities assessment D6.4 – eLearning portal D6.5 – Business development plan D6.6 – Communications report 2 D6.7 – Communications report 3 D6.8 – Communications report 4 D6.9 – Legacy document on the capacity/skills for risk and adaptation management
WP7	Management and Coordination	1 - TUBS	35.00	1	48	D7.1 – Consortium Agreement including IPR, Grant Agreement signed D7.2 – Project working plan with risk management and mitigation D7.3 – Data management plan D7.4 – Mid-term report, covering months 1 -16 D7.5 – Mid-term report, covering months 17-32 D7.6 – Final report covering full project D7.7 – Project legacy documented and implemented
WP8	Ethics requirements	1 - TUBS	0.00	1	48	D8.1 – OEI - Requirement No. 1 D8.2 – OEI - Requirement No. 2 D8.3 – OEI - Requirement No. 3 D8.4 – OEI - Requirement No. 4 D8.5 – OEI - Requirement No. 5

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### Work package WP1 – Real World Labs (RWL)

<b>Work Package Number</b>	WP1	<b>Lead Beneficiary</b>	4. GECO
<b>Work Package Name</b>	Real World Labs (RWL)		
<b>Start Month</b>	1	<b>End Month</b>	48

Objectives
<ul style="list-style-type: none"> <li>Establish and manage the four RWLs across Europe, inside a coherent RISK-TANDEM framework delineated in WP3. <ul style="list-style-type: none"> <li>Facilitate implementation of multi-level risk governance for DRM + DRR + CCA strategies (contributing to interoperable multi-risk models and tools development (WP2), engaging actors, spotting requirements, needs, barriers in current governance practices, modelling capabilities and gaps)</li> <li>Organize demonstration, training and discussion around real case histories of each RWL, showcasing knowledge co-production and trans-disciplinary co-production in connection with WP4.</li> <li>Build lasting real-world partnerships and collaboration between involved actors</li> </ul> </li> </ul>


Description
<p>The Real World Labs (RWL) catalyse efforts and partnerships to generate new knowledge and knowledge sharing inside the project, creating a collaborative learning and innovative environment, involving relevant actors in the DRM + DRR + CCA cycle. The activities will include periodical lab-specific interactions, and joint activities between RWL at least once a year.</p> <p>Task 1.1 Setting up and making operational the Real World Laboratories (RWL) (M1-M10) (lead: GECO, co-lead: G&amp;C, contributors: ALL)</p> <p>This task will involve the management of the Real World Labs, each one led by a responsible practice partner; GECO will coordinate WP1 to ensure coherence among RWL and connections with other WPs. We will initially frame RWL and stakeholders (already onboard and new ones to involve) based on relevant information (such as type of hazard, geographical area, role and interests along the hazard governance chain) inside the refined RISK-TANDEM Framework from WP3, (T3.1-3.2) and populate the multi-stakeholder platform by involving actors through formal and informal agreements. The lab activities will be carried out both individually and during joint cross-cutting RWL activities supported by WP4 (T4.4). This will facilitate the effective stakeholder involvement and co-production processes; each RWL responsible partner will be in charge of running RWL activities and following the co-production cycle defined and revised ( T1.2,T4.5) after the initial RWL setup phase is completed.</p> <p>Task 1.2 RWL Co-production process (M1-M45) (lead: SEI, co-lead: UCC, contributors: 52N, RWL resp. partners)</p> <p>Training of trainers will be conducted on how to implement the TANDEM trans-disciplinary knowledge co-production cycle in the RWL to allow for deeper knowledge co-production processes between developers of data and models, governance actors, and stakeholders. This will take place in conjunction with Tasks 4.1-4.4. The cycle for co-production will be defined and periodically reviewed during the project implementation (Task 4.5) with context-specific refinements made where needed to address the needs of the RWL and that of those developing transformative tools (WP2), governance mechanisms (WP3), and for design of the data fabric (WP5)</p> <p>Task 1.3 Evaluation and Outcomes/Impact monitoring of the RWL (M8-M48) (lead: IASS, co-lead: G&amp;C, contributors: OASIS, UCC, IIASA, RWL resp. partners)</p> <p>This task will evaluate the RISK-TANDEM framework's performance in the RWLs. The task will be carried out in parallel to T3.3. To that aim, we will evaluate the effectiveness of the governance mechanism in strengthening multi-stakeholder engagement, facilitating interoperability, and stimulating knowledge exchange to integrate DRR and CCA planning and operations also recurring to forensic examination of real world processes and event management. For each RWL, an outline will be designed detailing the inputs, activities, outputs, outcomes and impacts for systematic monitoring and evaluation of the project impacts for each RWL. The impact assessment will be done through a range of methods such as quantitative and qualitative assessment on KPIs, storytelling, documenting evidence of improved policy and practice.</p>

### Work package WP2 – Data and Model Interoperability

<b>Work Package Number</b>	WP2	<b>Lead Beneficiary</b>	14. GFZ
<b>Work Package Name</b>	Data and Model Interoperability		



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<b>Start Month</b>	1	<b>End Month</b>	48
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<b>Objectives</b>
<ul style="list-style-type: none"> <li>• Stocktaking of standards for the interoperability of data and models, identifying gaps and requirements to exchange information between different phases of DRM cycle and across hazards and integrating quantitative and qualitative indicators <ul style="list-style-type: none"> <li>• Making exemplary existing tools more interoperable by improving the data integration capacities and the combination of the outputs in a meaningful way to provide extended functionality for decision support</li> <li>• Informing and supporting integrated multi-hazard DRM and CCA planning in RWLs and co-develop solutions in RWLs</li> </ul> </li> </ul>

<b>Description</b>
<p>The concrete output products will be a compendium of standards for data and model interoperability, enhanced tools for DRM and CCA, and the demonstration of multi-hazard risk assessment and climate change adaptation including worst-case scenarios in RWLs.</p> <p>Task 2.1 Stocktaking for interoperability - a compendium (M0-M24) (lead: GECO, co-lead: 52N, contributors: GFZ, DTU, PIK, ETH, SEI, OASIS)</p> <p>Goal: This task aims to set up the scene of the available interoperable standards that can exchange data and information among any combination of models, databases and analytical and visualization tools.</p> <p>Methods: The stocktaking activities will i) follow the principles and recommendations promoted by European Interoperability Framework (EIF) and the EU eGovernment Action Plan 2016–2020, ii) analyse the available interoperable standards certified and recognized by international organisations such as Open Geospatial Consortium OGC and EU initiatives such as INSPIRE, iii) evaluate the replicability of available good practices, such as UNEP Preview, Copernicus, DesInventar Sendai, EU's DRMKC Risk Data Hub, EFAS, GLOFAS, Danube Reference Data and Services Infrastructure, EM-DAT, IdroGEO.</p> <p>The available standards will be ranked through a multi-criteria assessment based on the FAIR framework in order to identify a list of potentially reusable interoperability patterns -also known as interoperability best practices - suitable for DRR and CCA. Particular attention will be devoted to those interoperability standards allowing the development of web cloud based applications able to integrate multiple data, models and visualization tools in DRR and CCA, and to those helping to close existing gaps in spatio-temporal scales, multi-hazard, multi risks assessment.</p> <p>The compendium of selected data standards will inform the design and technical structure of the DATA FABRIC (WP5) and help establish a baseline of TRLs for single tools to be used and made interoperable.</p> <p>Task 2.2 Making tools interoperable (M13-M36) (lead: DTU, co-lead: ETH, contributors: PIK, GFZ, SEI, GECO, EV)</p> <p>Develop and demonstrate for a set of DRM cycle tools how data and knowledge from other tools can be included into their respective workflows. The Digital Twin Solution for flood risk intelligence SaferPLaces (GFZ, GECO) and the Seamless forecasting tool (PIK) will update their input/output data streams based on the recommendations from the T2.1 and WP1 (RWL). The probabilistic risk assessment tool CLIMADA (ETH) will implement a multi-criteria decision to include information from other sources. The high-resolution adaptation and economics tool (DTU), and CLIMADA (ETH) will align their damage-cost models for consistent up/down scaling in calibration. The Connectivity Hub and the Tandem Framework (SEI) will develop a more open-source taxonomy based on outcomes from T2.1 and WP1 (RWL). The hydro numeric urban flood RIMurban (GFZ) models will be extended to use remote sensing data and VGI for enhanced near-real-time inundation mapping and rapid flood impact estimation. OASIS-CAIMAN citizen app will be made interoperable tools including PIK forecasting and Geco tools – improving the existing functionality of the damage and loss information collected by the App.</p> <p>Task 2.3 Multi-hazard modelling for integrated DRM and CCA: Demonstration in RWLs (M24-M48) (lead: GFZ, co-lead: PIK, SEI, contributors: DTU, GECO, EV, IASS, UCC, G&amp;C)</p> <p>Goal: This task works to evaluate and assess alternative strategies of DRM and CCA strategies developed in the RWLs using a suite of interoperable impact and risk models. The outcomes will underpin the discussion in the RWLs with quantitative data and help to identify comprehensive solutions.</p> <p>Methods: This task is embedded in the bottom-up co-production approach of the RWLs (WP1 Task 1.2). The RWLs will define workflows for specific tasks and problems to be addressed in the particular RWL settings. To give an example, a workflow could consist of creating worst-case scenarios of extreme rainfall or drought events for stress-testing the system under future climate conditions and assessing the risks using a suitable set of interoperable models (Task 2.2). Further analytics will explore the effects of risk reduction strategies and adaptation options using cost-benefit analysis, economics of climate adaptation, and/or multi criteria decision modules (cf. Task 2.2).</p>

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### Work package WP3 – Governance

<b>Work Package Number</b>	WP3	<b>Lead Beneficiary</b>	5. IASS
<b>Work Package Name</b>	Governance		
<b>Start Month</b>	1	<b>End Month</b>	48

Objectives
<ul style="list-style-type: none"> <li>• Developing an innovative and integrated risk governance framework for DRR and CCA (RISK-TANDEM framework) <ul style="list-style-type: none"> <li>• Applying and testing the RISK-TANDEM framework empirically in Real World Labs (RWL) to facilitate the co-development and sustained application of risk models and tools via the interoperable platform</li> <li>• Publishing and sharing of tested and improved RISK-TANDEM framework that supports coherent and integrated DRR and CCA planning and decision-making processes and builds long-term governance capacity for information and knowledge integration</li> <li>• Identifying a tailored governance mechanism based on RISK-TANDEM's application to guide and sustain the knowledge exchange between targeted users beyond the project and enable co-ownership with targeted users</li> </ul> </li> </ul>

Description
<p>To improve governance interoperability, WP3 will provide an innovative and empirically tested risk governance framework that facilitates the application of risk models to support DRR and CCA planning and decision-making processes and build long-term governance capacity for information and knowledge integration.</p> <p>Task 3.1 Framework development (M1-M16) (lead: IASS, co-lead: SEI, contributors: IIASA, UCC)</p> <p>This task aims to integrate current state-of-the-art governance approaches for improved knowledge integration by means of co-creative approaches towards user and stakeholder engagement and increased accountability. This involves merging the International Risk Governance Council's Risk Governance Framework with the Tandem framework developed by SEI, the risk layering approach put forth by IIASA, and scoping alignment with other governance frameworks for DRR and CCA planning and decision-making processes, such as the SHIELD model from the EPRESSO project.</p> <p>Task 3.2 Applying a merged framework (RISK-TANDEM) to Real-World Labs (M12-M36) (lead: IASS, co-lead: UCC, contributors: IIASA, SEI, GFZ, PIK, DTU, GECO, OASIS, 52N, G&amp;C)</p> <p>This task will apply the RISK-TANDEM framework with RWL, tool and data fabric developers to improve risk management strategies.</p> <p>First, we will assess the status quo of risk governance in the RWLs against the backdrop of RISK-TANDEM. The framework application will identify the existing challenges for risk governance and decision-making regarding DRR and CCA by means of a disaster forensics approach in Copenhagen and Capital Region, the Danube region, the Emilia Romagna and the Rhine-Erft region. We will examine existing governance arrangements in each RWL with regards to, e.g., actor networks (governments and public authorities, corporations, civil society and private actors, both horizontally and vertically), multi-level governance and accountability arrangements (institutional, legal, financial), policy coherence, knowledge integration amongst relevant actors (e.g. experts, decisionmakers, stakeholder, affected citizens, first responders) and performance of risk assessment models that are already in place.</p> <p>Second, we will identify cross-cutting issues and synthesise key enablers and barriers for integrated DRR at different levels, for multiple hazards/risks and for different actors and objectives. The results of the forensic approach will be used to refine and update the RISK-TANDEM framework.</p> <p>Third, we will develop hypotheses for improving future governance based on evidence from the RWLs. This will include identifying existing and on-going CCA and DRR decision-making, planning and operational processes for different actors (e.g. emergency planners, city planners, community volunteers), and pinpoint entry points and priority challenges for the project's risk models and tools (e.g. Saferplaces, CLIMADA, OASIS) as well as outputs such as a functional draft HLD for the DATA-FABRIC, encompassing interoperability around governance mechanism/s, to influence long-term governance capacity for information and knowledge integration.</p> <p>Based on insights, recommendations will be developed for a tailored governance mechanism to guide and sustain the knowledge exchange between targeted stakeholders and users post-project and enable co-ownership with targeted users. In addition to literature review, this will involve stakeholder and user interviews as well as multi-stakeholder workshops. Outcomes will include a draft high-level dataflow (to feed into WP5), including associated workflows, schemas and access control protocols, that implement the recommended mechanism/s. The task will be completed in close collaboration with T1.3, T2.3, T3.1, T4.1 and WP5.</p> <p>Task 3.3 Evaluating RISK-TANDEM and Lessons Learnt (M33-M48) (lead: IASS, co-lead: UCC, contributors: SEI, IIASA)</p>

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This task will evaluate the updated RISK-TANDEM framework's performance in the RWLs. First, we will test the hypotheses developed in T3.2 and where possible apply recommendations for improving governance in the RWLs. To that aim, we will evaluate the effectiveness of the governance mechanism in strengthening multi-stakeholder engagement, facilitating interoperability, and stimulating knowledge exchange to integrate DRR and CCA planning and operations.

Second, we will update and improve the RISK-TANDEM framework based on empirical evidence generated in RWLs by means of interviews and multi-stakeholder workshops. Based on these insights we will generate guidelines for applying the selected governance mechanisms in other contexts as well as policy recommendations and suggestions for improved risk governance regarding DRR and CCA (e.g. adapting legal mechanisms, improving accountability, aligning financial arrangements). Furthermore, we will produce guidance on good practices regarding interoperability of governance mechanisms and recommendations for institutionalising project outcomes into existing systems.

The task will be completed in close collaboration with WP1, WP4 and WP5.

### Work package WP4 – Supporting information interoperability through transdisciplinary knowledge co-production processes

<b>Work Package Number</b>	WP4	<b>Lead Beneficiary</b>	18. SEI
<b>Work Package Name</b>	Supporting information interoperability through transdisciplinary knowledge co-production processes		
<b>Start Month</b>	1	<b>End Month</b>	48

#### Objectives

- Iterative application of Tandem knowledge co-production cycle with RWL, tool and data fabric developers to improve information interoperability and risk management strategies.
  - Identify, distil and unpack the barriers and enablers to applying transdisciplinary co-productive learning processes to support the co-creation of transformative tools and a data fabric, incorporating needs from across the project.
  - Assess the replicability of transdisciplinary co-productive learning processes within RWL for co-designing and implementing tools and supporting the data fabric.
  - Support cross-real world lab learning, capacity development and knowledge exchange by translating insights and lessons learned to scale up and sustain transdisciplinary co-production processes for improved risk management strategies.
  - Refine the Tandem knowledge co-production cycle to improve information interoperability based on learning from the RWL.

#### Description

To improve information interoperability, WP4 will develop and apply transdisciplinary knowledge co-production and learning processes in the RWL providing insights for developing transformative tools (WP2), governance mechanisms (WP3), a data fabric (WP5) and improved risk management strategies, using a bottom-up, value-driven co-development approach.

Task 4.1 Apply the Tandem knowledge co-production cycle to the RWL (M6-M45) (lead: SEI, co-lead: GECO, contributors: IASS, UCC, GFZ, PIK, DTU, IIASA)

Whilst WP3 will enhance the governance elements of the Tandem framework, this task will iteratively apply Tandem to the RWL with a focus on knowledge co-production processes. The identification of stakeholders (T1.1) will be followed with the co-design of transdisciplinary knowledge co-production processes with RWL (T1.2) to understand their needs. This will provide insights for developing transformative tools (WP2), governance mechanisms (WP3), and a data fabric (WP5) to increase interoperability for improved disaster risk management.

Task 4.2 RWL comparison and assessment of needs through learning, capacity development and knowledge exchange (M9-M36) (lead: SEI, co-lead: 52N, contributors: IASS, GECO, UCC, GFZ, PIK, DTU, IIASA, GC)

This task will identify cross-cutting issues and synthesise key enablers and barriers for integrated DRM at different levels, for multiple hazards/risks and for different actors/objectives to assess the replicability of this approach for increasing disaster resilience work flows, building on periodic reporting in RWL (WP1). The transdisciplinary knowledge co-production process in itself increases the capacity of stakeholders involved (including modellers) in the iterative and long-term engagements and these needs will be supported through capacity development workshops in parallel with T1.2.

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Task 4.3 Distil relevant climate and non-climate information for the tools and data fabric (M12-M42) (lead: SEI, co-lead: 52N, contributors: GECO, IASS, GECO, UCC, GFZ, PIK, DTU, IIASA)

In connection with T1.3, this task will enable discussions around trade-offs and assumptions in the different models being used, and how to refine or adapt such assumptions. Ongoing feedback will allow iterative development of the models, which will increase the transparency of the model's assumptions, and enable participants to reflect on the accuracy of different outputs. Transdisciplinary dialogue on this can reveal important underlying drivers of vulnerability which undermine disaster resilience. Such insights will help understand dataflows that span (and enable) varied models, applications/toolkits and the framework itself. In turn, this will influence outcomes that improve information interoperability and its manifestation through the data fabric to improve disaster planning, recovery and response.

Task 4.4: Updating and improving the Tandem knowledge co-production cycle based on empirical evidence generated in RWL (M6-M48) (lead: SEI, co-lead: 52N, contributors: IASS, IASS, GECO, UCC, GFZ, PIK, DTU, IIASA)

The Tandem knowledge co-production cycle will be iteratively improved and refined in conjunction with WP3, based on empirical evidence from applying and testing the framework in the RWL (T1.2, T4.1). Periodic reporting from the RWL will identify different conditions of applicability (multiple hazards/risks) for improving interoperability in a range of decision contexts, and further refine the existing Tandem interactive tool ([www.weADAPT.org/tandem](http://www.weADAPT.org/tandem)) to enable it to be applied in other regions.

### Work package WP5 – Data fabric

<b>Work Package Number</b>	WP5	<b>Lead Beneficiary</b>	15. 52N
<b>Work Package Name</b>	Data fabric		
<b>Start Month</b>	1	<b>End Month</b>	48

#### Objectives

Provide the infrastructure to demonstrate the impact of DRR & CCA interoperability: (i) increased sharing, availability and aggregation of data across the EU allowing innovative solutions for increased resilience and more effective disaster warning and response; (ii) the ability to respond rapidly to the availability of new data sources, new patterns of data usage and the changing nature of risk; and (iii) implementation of the risk-governance framework (WP3), promoting wider dissemination of CCA research/analysis and accountability at a provincial/federal scale for DRR.

- Develop a reference architecture for the data infrastructure, services and capabilities (together termed the “DATA-FABRIC”) required to achieve the vision of Interoperability for DRR and CCA.
- Configure an operational prototype of the data fabric, capable of spanning the data landscapes (data production & consumption) of each RWL participant.
- Establish the source data connections and configure the workflows required to demonstrate the RWL Use Cases (WP1).

#### Description

WP5 will develop the high-level architectural definition for the data fabric implementation required to support DRR and CCA Interoperability (WP2), data standards (WP2) and governance (WP3) requirements. It will undertake the configuration of a prototype covering the Use Cases defined within the RWLs (WP1) together with the associated transdisciplinary knowledge co-production processes (WP4).

Task 5.1 Stocktaking of the Current Data Context (M1-M21) (lead: 52N, co-lead: GECO, contributors: OASIS, UCC, IIASA, RWL resp. partners)

Goal: Establish the process, technical and data details of each organisation that will be connecting to the data fabric as a participant in the RWL (WP1).

Method: For each of the Research, Local & Regional Authorities and Practitioners participating in the prototype, document the solution landscape applicable to DRR and CCA related work covering data consumed; data produced; data standards (refer WP2); data governance; systems used; data interfaces; process interfaces; operational description - functions, timing, outputs, objectives; key business and technical representative(s) with understanding of objectives, usage details, systems, data and technical capability.

Consult prior work, similar initiatives and interoperability tools used to leverage best practice, align and research. For example the Sendai Framework, FP7, H2020, priorities of the Green Deal and the IFAFRI Capability Gaps. Alignment of value with other current initiatives will also be investigated such as the work of the GRIII.

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<p><b>Task 5.2 Define the project interoperability Use Cases (M1-M24) (lead: 52N, co-lead: GECO, contributors: GFZ, UCC, IIASA, SEI, RWL resp. partners)</b></p> <p><b>Goal:</b> Select a set of Use Cases that will be showcased in the prototype DRR and CCA interoperability platform. To document each Use Case with sufficient detail to enable the DATA-FABRIC architecture and design to be completed to a standard that supports the Use Case fully.</p> <p><b>Method:</b> Coordinate with RWLs (WP1) to define a set of Use Cases to demonstrate Interoperability (WP2), Governance (WP3) and the value of transdisciplinary knowledge co-production processes (WP4) in the prototype data fabric. Use Cases will be selected based on the impact that they will demonstrate with regards to (i) the value of interoperability, and (ii) the suitability of data fabric architecture framework developed (including the agility and the flexibility to scale as the scope of DRR and CCA opportunities mature beyond the end of the project.</p> <p>Prepare Solution Architecture for the selected Use Cases covering Use Case goals, processes, required components, interfaces, data flows, data standards, acceptance criteria and responsibilities.</p> <p><b>Task 5.3 Define the Reference Architecture for the DATA-FABRIC (M22-M24) (lead: 52N, co-lead: GECO, contributors: GFZ, ETH)</b></p> <p><b>Goal:</b> Define the Reference Architecture for the DIRECTED DATA-FABRIC. Refer to the Description above for the data challenges that the DATA-FABRIC will address.</p> <p><b>Method:</b> Draft a Reference Architecture for the DATA-FABRIC incorporating Data Mesh, Virtualisation and any other innovations necessary to fulfil the data ecosystem demands of real time and long term analytics in a complex transboundary environment comprising scientific, governance, policy and social areas and requiring inter-sectoral cooperation. The architecture will cover: (i) data management layer (fabric, mesh, components); (ii) data and workflow interfaces; (iii) functional tools and services requirements; and (iv) non-functional requirements.</p> <p><b>Task 5.4 Design, build, configure and commission the prototype DATA-FABRIC (M22-M36) (lead: 52N, co-lead: GECO, contributors: OASIS, SEI)</b></p> <p><b>Goal:</b> Deliver a service platform that fulfils the technical requirements of data sharing and interoperability defined in the RWL Use Cases.</p> <p>Achieve a compelling working example of each Use Case with high impact insights being exposed through the aggregation of data across inter-dependent organisations in the region.</p> <p><b>Method:</b> Undertake the design, build and implementation of the prototype DATA-FABRIC and associated tools, components and Data Mesh capabilities. Major process milestones: (i) develop technical architecture; (ii) incorporate data implementation project processes, tasks, stages and responsibilities into the overall project plan; (iii) source components, services and infrastructure as required; (iv) build and configure the data fabric; (v) undertake testing, training (WP1) &amp; acceptance; and (vi) configure Use Cases.</p> <p><b>Task 5.5 Improvements &amp; refinements with operation (M37-M48) (lead: 52N, co-lead: GECO, contributors: OASIS, SEI)</b></p> <p><b>Goal:</b> Continuously improve the data fabric, upon RWL use, to more closely match governance and analytics mechanism/s sought to be adopted</p> <p><b>Method:</b> Continued operation of the data fabric in the final year will allow for RWL users and strategists to propose/drive/inform improvements and refinements. These will be documented as updates to HLD, LLD, user documentation and then configuration altered, in periodic (monthly or less frequent) updates to the operational system.</p>
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## Work package WP6 – Communications, dissemination, exploitation and Impact


<b>Work Package Number</b>	WP6	<b>Lead Beneficiary</b>	17. OASIS
<b>Work Package Name</b>	Communications, dissemination, exploitation and Impact		
<b>Start Month</b>	1	<b>End Month</b>	48

### Objectives

To develop appropriate communication, dissemination, learning, education, training and exploitation for all stakeholders linked to aims for integrating risk assessment, risk governance and management, climate adaptation planning, communication and operational tools and systems for coping with extreme climate events. Objectives are:

- Expanding capabilities to communicate, utilize and exchange state-of-the-art data, information and knowledge between actors.
- Boosting the integration, accessibility and interoperability of models to actors.
- Facilitating an enhanced community engagement and developing new governance and risk management strategies using a bottom-up, value-driven co-development approach.

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- Developing routes to market scaling via business plan development for the public and private sector

Description
<p>WP6 will establish the DIRECTED communication, dissemination and exploitation programme through cooperation across all work packages. We will develop capacity and modalities to optimise and integrate co-developed new governance, interoperable systems, knowledge production frameworks and data fabric architectures and demonstrate the benefits of enhanced disaster risk governance.</p> <p>Task 6.1 Develop a communication strategy for the directed project and thereafter communication updates for relevant reporting cycles (M1-4) (Lead: OASIS)</p> <p>Task 6.2 Deliver a full communication programme (M3-48) (Lead OASIS). This task will develop communication processes including use of social media, blogs, website development, events, workshops, conferences, research papers, webinar series, media packs, policy briefs and meetings with policy-makers.</p> <p>Task 6.3. Identify current institutional capacity for integrated multi-hazard risk and climate change adaptation (M2-9) (Lead GFZ)</p> <p>This task will define “Impact Pathway(s)” for high potential Key Exploitable Results (KERs) identified in WP2, WP3, WP4, WP5 and WP6 itself using inputs from T3.3 and D3.4. In partnership with the RWLs, end-users will be identified, and a custom knowledge transfer plan (KTP) will be developed (message, medium, channel, impact measurement) per KER to maximise change of uptake/application. Involvement across all actor groups through the RWLs will ensure that stakeholders are continuously and actively involved in the co-development process and address topical problems of multi-hazard risk management and climate change adaptation to maximise impacts. The KTP will determine the institutional capacity that currently exists for knowledge transfer by conducting an assessment of existing training and education opportunities, and benchmarking them against other programmes in Europe that support multi-hazard risk management and climate change adaptation.</p> <p>Task 6.4. Develop programmes to support integrated responses to multi-hazard risk and climate change adaptation (M10-45) (Lead UCC)</p> <p>This task covers development of programmes that marry governance frameworks (WP3 and 4) that can be supported by innovative technical frameworks (WP2 and 5) to access, transform and integrate data and models into customized workflows for creating actionable solutions. Programmes would target vocational long-life training to support the Real World Labs, student support materials and provide support and help build risk and adaptation solutions, especially those identified by Real World Labs. In order to perpetuate learning programmes, a co-designed and co-developed “Training of Trainers” programme will be developed through a dedicated Workshop with trainers, and curriculum developed in response to needs, so that capability beyond the DIRECTED project is ensured. Workshops delivered both in-person and online will be highly participatory and practical, focusing on techniques, tools and tips of training management, with participants themselves designing, delivering and critiquing methods. A suitable e-learning portal will be identified during the project to deposit and make available all training materials produced; this will increase the ability to deliver 21st century learning and training opportunities.</p> <p>Task 6.5. Pilot tracking of KTT Implementation and application of integrated governance and technical tools (M30-45) (Lead UCC)</p> <p>This task will monitor and evaluate the application of dissemination and exploitation activities to enable and promote the enabling ecosystem within the bounds of the RWLs to utilise the technological tools within an appropriate regulatory and economic perspective. T6.5 will examine how capacity/skills and related evolving pathways in development of governance and technological frameworks can better address the challenges of integrated responses to risk and adaptation management. The task will be a cross-cutting task focused on integrating insights from all WPs to frame the capacity/skill needs for a transformative change to achieve the project objectives.</p> <p>Task 6.6 Exploitation - Business planning with public and private sector for scaling outputs (M36-M48) (Lead Oasis)</p> <p>A business development plan will be developed to cover new data, interoperable analytical tools and the potential exploitation of the data fabric/ mesh. The potential of the tools and systems will be examined in both the public sector and the private sector e.g. discussion around the best way to scale the use of tools developed and made interoperable in the project.</p>

### Work package WP7 – Management and Coordination

<b>Work Package Number</b>	WP7	<b>Lead Beneficiary</b>	1. TUBS
<b>Work Package Name</b>	Management and Coordination		
<b>Start Month</b>	1	<b>End Month</b>	48

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Objectives
<ul style="list-style-type: none"> <li>• successful, effective and efficient management of the project, communication between partners, with the EC and the External Innovation Advisory Board, risk and conflict management               <ul style="list-style-type: none"> <li>• set-up and maintenance of the detailed working plan, monitoring and control of timely completion of tasks, milestones and deliverables, and delivery of expected outcomes including quality control</li> <li>• ensure sustainability, exploitation and legacy beyond the project lifetime</li> </ul> </li> </ul> <p>The project management team consists of the project coordinator (PC), project manager (PM), project steering committee (PSC) and the Management support team (MST). An external Innovation Advisory Board (EIAB) will be installed to give advice for scientific, technological and practicality of project outcomes.</p>
Description
<p>WP7 will implement the project governance structure to ensure a high-impact project through a streamlined coordination, with timely submission of deliverables, accurate financial and risk management, reliable quality control and exploiting synergies between different WPs.</p> <p>Task 7.1 Project Coordination and administration (M1-M48) (lead: GFZ, contributors: WP leads: OASIS, GECO, IASS, SEI, UCC, 52N )</p> <p>This task deals with the formal responsibilities of project coordination. The PC will act as the sole interface between the DIRECTED and the EC officials allocated to the project and will be responsible for collecting and submitting the cost statements, deliverables and project reports (technical and financial). It encompasses: i) ensuring that project contractual obligations are met, ii) co-ordination at consortium level of participant contractual obligations and collective responsibilities, iii) communication between the consortium and the EC, iv) communication between consortium members, v) submission of project deliverables and financial and periodic reports to EC, vi) implementation of any contractual changes.</p> <p>The day-to-day administration of the project will be undertaken by the PC and PM supported by MST. The responsibilities and tasks will be detailed in the CA and will comprise administration of EC financial contribution and its distribution to project participants, maintenance of CA and GA, and ensuring transparency and logging of project correspondence and ensuring prompt response. (D7.1)</p> <p>Task 7.2 Project implementation, work planning, monitoring, reporting and quality control (M1-M48) (lead: GFZ, contributors: OASIS, GECO, IASS, SEI, UCC, 52N)</p> <p>This task works to establish a transparent overview of project activities and their progress as a basis for risk management and mitigation, monitoring project progress against the work plan and achievement of the project objectives. A detailed working plan will be set-up including risk management and mitigation using cloud-based project and task management for teams (e.g. Nextcloud deck), monitored and updated by the PSC to supervise the execution and progress of the project (D7.2). The PSC will meet on a regular basis at least twice a year. All partner meetings will be held every six months to review the progress of the work and plan the next steps. Data and information exchange will be implemented within the EUDAT services for trusted and secure data and information management.</p> <p>Reporting will be done according to EU guidelines and the requirements and timeline specified in the GA (D7.4, 7.5). Internal intermediate reporting by WP leads to the PC and PSC will be done at least annually. Progress of the project against the working plan be checked and updated during PSC meetings at least twice a year.</p> <p>A review procedure for deliverables and milestone reports will be implemented including: draft release of deliverables by WP lead, two-week review period for commenting by project partners, two-week amendment period, and two-week for approval by PSC.</p> <p>Task 7.3 Data management, exploitation and impacts beyond project lifetime (M1-M48) (lead: GFZ, contributors: OASIS, IASS, SEI, UCC, 52N, GECO)</p> <p>This task will ensure that all data collected and produced in DIRECTED will follow FAIR principles. Data will be made available in accordance with EC's open science policy using EUDAT services where possible. Partners' IPR will be considered as needed and detailed in the CA as well as possibilities for exploiting project outcomes along pathways to impact. A data management plan (DMP) based on the EC's template will be implemented which will describe the data management life cycle for the project data to be collected, processed or generated and the measures to curate, store, protect and give access to them. Annual reviews of the DMP will reflect the project progress and developments. (D7.3)</p> <p>This task also works to provide for the maintenance of the project outreach platforms, outputs, accessibility of the project's reports via major (EU) portals (e.g. weADAPT, OASIS-HUB, et. ), further support for the dissemination of the products, and proper management of the IPR beyond the lifespan of the project (D7.6). The strategy will be designed based on the contributions of WP6 and other relevant WPs and reviewed by the EIAB.</p>

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### Work package WP8 – Ethics requirements

<b>Work Package Number</b>	WP8	<b>Lead Beneficiary</b>	1. TUBS
<b>Work Package Name</b>	Ethics requirements		
<b>Start Month</b>	1	<b>End Month</b>	48

#### Objectives

The objective is to ensure compliance with the 'ethics requirements' set out in this work package.

#### Description

This work package sets out the 'ethics requirements' that the project must comply with.




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 Associated with document Ref: Ares(2022)6149485 - 06/09/2022
**STAFF EFFORT**

<b>Staff effort per participant</b>									
<i>Grant Preparation (Work packages - Effort screen) — Enter the info.</i>									
<b>Participant</b>	<b>WP1</b>	<b>WP2</b>	<b>WP3</b>	<b>WP4</b>	<b>WP5</b>	<b>WP6</b>	<b>WP7</b>	<b>WP8</b>	<b>Total Person-Months</b>
1 - TUBS	10.00	6.00	4.00	4.00	4.00	6.00	22.00		56.00
2 - PIK	14.00	12.00	2.00	2.00	4.00	4.00			38.00
3 - DTU	16.00	18.00	2.00	2.00	4.00	4.00			46.00
4 - GECCO	24.00	16.00	2.00	6.00	16.00	6.00	2.00		72.00
5 - IASS	8.00	6.00	24.00	8.00	2.00	2.00	2.00		52.00
6 - UCC	12.00	2.00	24.00	8.00		12.00	2.00		60.00
7 - REGIONH	20.00					4.00			24.00
8 - ARSTPC-ER	10.00					4.00			14.00
9 - G&C	14.00	1.00	1.00	1.00		3.00			20.00
10 - IIASA	4.00		18.00	2.00		2.00			26.00
11 - EV	20.00	6.00		6.00		4.00			36.00
12 - ZSRT	11.00	2.00	2.00	2.00	1.00	2.00			20.00
13 - ARPAAE	6.00					4.00			10.00
14 - GFZ	8.00	18.00	2.00	2.00	2.00	2.00	2.00		36.00
15 - 52N	4.00	5.00	2.00	5.00	22.00	1.00	1.00		40.00
16 - ETH	6.00	18.00							24.00
17 - OASIS	5.00	2.00				20.00	2.00		29.00
18 - SEI	12.00	6.00	12.00	24.00		2.00	2.00		58.00
<b>Total Person-Months</b>	<b>204.00</b>	<b>118.00</b>	<b>95.00</b>	<b>72.00</b>	<b>55.00</b>	<b>82.00</b>	<b>35.00</b>	<b>0.00</b>	<b>661.00</b>

## LIST OF DELIVERABLES

<b>Deliverables</b>						
<i>Grant Preparation (Deliverables screen) — Enter the info.</i>						
<i>The labels used mean:</i>						
<i>Public — fully open  automatically posted online)</i>						
<i>Sensitive — limited under the conditions of the Grant Agreement</i>						
<i>EU classified — RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision <a href="#">2015/444</a></i>						
<b>Deliverable No</b>	<b>Deliverable Name</b>	<b>Work Package No</b>	<b>Lead Beneficiary</b>	<b>Type</b>	<b>Dissemination Level</b>	<b>Due Date (month)</b>
D1.1	RWL description and set-up	WP1	4 - GECCO	R — Document, report	PU - Public	10
D1.2	Capacity development strategy for Training of Trainers on implementing transdisciplinary knowledge co-production processes in the RWL	WP1	18 - SEI	R — Document, report	PU - Public	12
D1.3	Case studies of DRR/CCA processes to date - forensic examination of real world process and events management	WP1	17 - OASIS	R — Document, report	PU - Public	24
D1.4	Outcomes from RWL in multi-risk governance	WP1	5 - IASS	R — Document, report	PU - Public	45
D2.1	Compendium on data standards for interoperability in DRR and CCA	WP2	4 - GECCO	R — Document, report	PU - Public	24
D2.2	Enhanced interoperability of tools available to users through software repository and documentation	WP2	3 - DTU	OTHER	PU - Public	36
D2.3	Interoperability demonstration factsheets (description and illustration of workflow implementations in RWL as best practice examples)	WP2	14 - GFZ	R — Document, report	PU - Public	46

**Deliverables**

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D3.1	RISK-TANDEM Framework	WP3	5 - IASS	R — Document, report	PU - Public	16
D3.2	Updated RISK-TANDEM Framework for governance processes and interoperability	WP3	5 - IASS	R — Document, report	PU - Public	36
D3.3	Policy brief on risk governance in the context of DRR and CCA	WP3	5 - IASS	R — Document, report	PU - Public	42
D3.4	Guidance on good practices regarding interoperability of governance mechanisms and recommendations for institutionalising project outcomes and the interoperable platform into existing systems	WP3	5 - IASS	R — Document, report	PU - Public	48
D4.1	Capacity development modules for ToT workshops in designing transdisciplinary knowledge co-production processes	WP4	18 - SEI	DEC — Websites, patent filings, videos, etc	PU - Public	36
D4.2	Framework for distilling assumptions in different modelling approaches with recommendations for replicating this approach	WP4	18 - SEI	R — Document, report	PU - Public	42
D4.3	Updated (tested & refined) TANDEM cycle for transdisciplinary knowledge co-production processes and information interoperability	WP4	18 - SEI	DEC — Websites, patent filings, videos, etc	PU - Public	48

**Deliverables**

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D5.1	High Level Design Document - Data Fabric	WP5	15 - 52N	R — Document, report	PU - Public	21
D5.2	Low Level Design Document Data Fabric	WP5	15 - 52N	R — Document, report	PU - Public	24
D5.3	Data Protection Impact Assessment	WP5	15 - 52N	R — Document, report	PU - Public	24
D5.4	Implementation documentation (e.g. planning, test/acceptance, training, user guides)	WP5	15 - 52N	R — Document, report	PU - Public	24
D5.5	Data Fabric Service Platform including configured RWL Interoperability Use Cases.	WP5	15 - 52N	OTHER	PU - Public	36
D5.6	Change Control documents	WP5	15 - 52N	R — Document, report	PU - Public	48
D5.7	User training by role (UCC) link to WP6 eLearning platform	WP5	15 - 52N	R — Document, report	PU - Public	30
D6.1	Communications Strategy	WP6	17 - OASIS	R — Document, report	PU - Public	4
D6.2	Communications report 1	WP6	17 - OASIS	R — Document, report	PU - Public	12
D6.3	Gaps and Opportunities assessment	WP6	1 - TUBS	R — Document, report	PU - Public	9
D6.4	eLearning portal	WP6	6 - UCC	OTHER	PU - Public	45
D6.5	Business development plan	WP6	17 - OASIS	R — Document, report	PU - Public	48
D6.6	Communications report 2	WP6	17 - OASIS	R — Document, report	PU - Public	24
D6.7	Communications report 3	WP6	17 - OASIS	R — Document, report	PU - Public	36

**Deliverables**

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D6.8	Communications report 4	WP6	17 - OASIS	R — Document, report	PU - Public	48
D6.9	Legacy document on the capacity/skills for risk and adaptation management	WP6	6 - UCC	R — Document, report	PU - Public	36
D7.1	Consortium Agreement including IPR, Grant Agreement signed	WP7	1 - TUBS	R — Document, report	SEN - Sensitive	1
D7.2	Project working plan with risk management and mitigation	WP7	1 - TUBS	R — Document, report	SEN - Sensitive	3
D7.3	Data management plan	WP7	1 - TUBS	DMP — Data Management Plan	PU - Public	5
D7.4	Mid-term report, covering months 1 - 16	WP7	1 - TUBS	R — Document, report	PU - Public	16
D7.5	Mid-term report, covering months 17-32	WP7	1 - TUBS	R — Document, report	PU - Public	32
D7.6	Final report covering full project	WP7	1 - TUBS	R — Document, report	PU - Public	48
D7.7	Project legacy documented and implemented	WP7	1 - TUBS	R — Document, report	PU - Public	48
D8.1	OEI - Requirement No. 1	WP8	1 - TUBS	ETHICS	SEN - Sensitive	3
D8.2	OEI - Requirement No. 2	WP8	1 - TUBS	ETHICS	SEN - Sensitive	12
D8.3	OEI - Requirement No. 3	WP8	1 - TUBS	ETHICS	SEN - Sensitive	24
D8.4	OEI - Requirement No. 4	WP8	1 - TUBS	ETHICS	SEN - Sensitive	36
D8.5	OEI - Requirement No. 5	WP8	1 - TUBS	ETHICS	SEN - Sensitive	3

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 Associated with document Ref. Ares(2022)6149485 - 06/09/2022**Deliverable D1.1 – RWL description and set-up**

<b>Deliverable Number</b>	D1.1	<b>Lead Beneficiary</b>	4. GECO
<b>Deliverable Name</b>	RWL description and set-up		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	10	<b>Work Package No</b>	WP1

<b>Description</b>
Report on Real-World-Labs stakeholder landscape CCA&DRR challenges and set-up process

**Deliverable D1.2 – Capacity development strategy for Training of Trainers on implementing transdisciplinary knowledge co-production processes in the RWL**

<b>Deliverable Number</b>	D1.2	<b>Lead Beneficiary</b>	18. SEI
<b>Deliverable Name</b>	Capacity development strategy for Training of Trainers on implementing transdisciplinary knowledge co-production processes in the RWL		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	12	<b>Work Package No</b>	WP1

<b>Description</b>
Guidance on implementing transdisciplinary knowledge co-production processes in the RWL based on the Tandem framework.

**Deliverable D1.3 – Case studies of DRR/ CCA processes to date - forensic examination of real world process and events management**

<b>Deliverable Number</b>	D1.3	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Case studies of DRR/ CCA processes to date - forensic examination of real world process and events management		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP1

<b>Description</b>
Report on case studies of DRR/ CCA processes to date and forensic examination of real world process and events management.

**Deliverable D1.4 – Outcomes from RWL in multi-risk governance**

<b>Deliverable Number</b>	D1.4	<b>Lead Beneficiary</b>	5. IASS
<b>Deliverable Name</b>	Outcomes from RWL in multi-risk governance		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	45	<b>Work Package No</b>	WP1

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Description
Summary reports for each RWL about the inputs, activities, outputs, outcomes and impacts for evaluation of the project impacts.

### Deliverable D2.1 – Compendium on data standards for interoperability in DRR and CCA

<b>Deliverable Number</b>	D2.1	<b>Lead Beneficiary</b>	4. GECO
<b>Deliverable Name</b>	Compendium on data standards for interoperability in DRR and CCA		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP2

Description
The Deliverable will develop a compendium of standards for the exchange of data and information among any combination of models, databases and analytical and visualization tools for the DRR and CCA domain.

### Deliverable D2.2 – Enhanced interoperability of tools available to users through software repository and documentation

<b>Deliverable Number</b>	D2.2	<b>Lead Beneficiary</b>	3. DTU
<b>Deliverable Name</b>	Enhanced interoperability of tools available to users through software repository and documentation		
<b>Type</b>	OTHER	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP2

Description
Extended and improved software tools (codes), implementing improved interoperability and demonstration, with scientific and technical documentation/user guidelines, made available via open-source repositories (e.g. Github) or published in open access journals

### Deliverable D2.3 – Interoperability demonstration factsheets (description and illustration of workflow implementations in RWL as best practice examples)

<b>Deliverable Number</b>	D2.3	<b>Lead Beneficiary</b>	14. GFZ
<b>Deliverable Name</b>	Interoperability demonstration factsheets (description and illustration of workflow implementations in RWL as best practice examples)		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	46	<b>Work Package No</b>	WP2

Description
Reports on workflows for interoperability in Real World Labs as best practice examples (one report per RWL).

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### Deliverable D3.1 – RISK-TANDEM Framework

<b>Deliverable Number</b>	D3.1	<b>Lead Beneficiary</b>	5. IASS
<b>Deliverable Name</b>	RISK-TANDEM Framework		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	16	<b>Work Package No</b>	WP3

<b>Description</b>
Conceptual development of a state-of-the-art risk governance approach for improved knowledge integration.

### Deliverable D3.2 – Updated RISK-TANDEM Framework for governance processes and interoperability

<b>Deliverable Number</b>	D3.2	<b>Lead Beneficiary</b>	5. IASS
<b>Deliverable Name</b>	Updated RISK-TANDEM Framework for governance processes and interoperability		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP3

<b>Description</b>
Report on an updated RISK-TANDEM framework based on lessons learnt from the existing and on-going CCA and DRR decision-making processes in the RWLs.

### Deliverable D3.3 – Policy brief on risk governance in the context of DRR and CCA

<b>Deliverable Number</b>	D3.3	<b>Lead Beneficiary</b>	5. IASS
<b>Deliverable Name</b>	Policy brief on risk governance in the context of DRR and CCA		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	42	<b>Work Package No</b>	WP3

<b>Description</b>
Policy brief document on risk governance in the context of DRR and CCA

### Deliverable D3.4 – Guidance on good practices regarding interoperability of governance mechanisms and recommendations for institutionalising project outcomes and the interoperable platform into existing systems

<b>Deliverable Number</b>	D3.4	<b>Lead Beneficiary</b>	5. IASS
<b>Deliverable Name</b>	Guidance on good practices regarding interoperability of governance mechanisms and recommendations for institutionalising project outcomes and the interoperable platform into existing systems		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP3



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Description
Recommendations for tailored governance mechanisms to guide and sustain the knowledge exchange.

### Deliverable D4.1 – Capacity development modules for ToT workshops in designing transdisciplinary knowledge co-production processes

<b>Deliverable Number</b>	D4.1	<b>Lead Beneficiary</b>	18. SEI
<b>Deliverable Name</b>	Capacity development modules for ToT workshops in designing transdisciplinary knowledge co-production processes		
<b>Type</b>	DEC —Websites, patent filings, videos, etc	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP4

Description
Interactive online capacity development modules on applying the Tandem framework in the RWL.

### Deliverable D4.2 – Framework for distilling assumptions in different modelling approaches with recommendations for replicating this approach

<b>Deliverable Number</b>	D4.2	<b>Lead Beneficiary</b>	18. SEI
<b>Deliverable Name</b>	Framework for distilling assumptions in different modelling approaches with recommendations for replicating this approach		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	42	<b>Work Package No</b>	WP4

Description
A report describing an approach to explore trade-offs and assumptions in the different models used, and how to refine or adapt such assumptions to be more context-based.

### Deliverable D4.3 – Updated (tested & refined) TANDEM cycle for transdisciplinary knowledge co-production processes and information interoperability

<b>Deliverable Number</b>	D4.3	<b>Lead Beneficiary</b>	18. SEI
<b>Deliverable Name</b>	Updated (tested & refined) TANDEM cycle for transdisciplinary knowledge co-production processes and information interoperability		
<b>Type</b>	DEC —Websites, patent filings, videos, etc	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP4

Description
Updated version of the existing Tandem interactive tool ( <a href="http://www.weADAPT.org/tandem">www.weADAPT.org/tandem</a> ) based on evidence from the RWL, to enable it to be applied in other regions.

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### Deliverable D5.1 – High Level Design Document - Data Fabric

<b>Deliverable Number</b>	D5.1	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	High Level Design Document - Data Fabric		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	21	<b>Work Package No</b>	WP5

<b>Description</b>
Take stock of the technical and data details of organisations that will contributing to or taking out from the data fabric layer.

### Deliverable D5.2 – Low Level Design Document Data Fabric

<b>Deliverable Number</b>	D5.2	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	Low Level Design Document Data Fabric		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP5

<b>Description</b>
Develop an architectural definition of how 52N's data fabric software can be configured to support DRR and CCA interoperability incorporating data standards and governance developed elsewhere in the project and design, a prototype using a subset of the project universe.

### Deliverable D5.3 – Data Protection Impact Assessment

<b>Deliverable Number</b>	D5.3	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	Data Protection Impact Assessment		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP5

<b>Description</b>
Articulate the implications of GDPR compliance on the various forms of data input, output and storage. Design appropriate combination of scanning, penetration testing, firewall provision, endpoint security, privilege and identity assurance.
Link different access / user regimes to privilege and user indentity.

### Deliverable D5.4 – Implementation documentation (e.g. planning, test/acceptance, training, user guides)

<b>Deliverable Number</b>	D5.4	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	Implementation documentation (e.g. planning, test/acceptance, training, user guides)		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP5

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Description
Create and document an appropriate testing regime. Create chapter headings and where appropriate content for training and user manual

### Deliverable D5.5 – Data Fabric Service Platform including configured RWL Interoperability Use Cases.

<b>Deliverable Number</b>	D5.5	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	Data Fabric Service Platform including configured RWL Interoperability Use Cases.		
<b>Type</b>	OTHER	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP5

Description
Build a platform to conform with the high and low level design workstream outputs to support DRR and CCA interoperability incorporating data standards and governance developed elsewhere in the project and design.

### Deliverable D5.6 – Change Control documents

<b>Deliverable Number</b>	D5.6	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	Change Control documents		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP5


Description
This work stream will set out the communication process around changes to inputs, outputs and systems operation. It will follow a standard process.  Define change Submit and review request to team Create response to request Decision and Approval

### Deliverable D5.7 – User training by role (UCC) link to WP6 eLearning platform

<b>Deliverable Number</b>	D5.7	<b>Lead Beneficiary</b>	15. 52N
<b>Deliverable Name</b>	User training by role (UCC) link to WP6 eLearning platform		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	30	<b>Work Package No</b>	WP5

Description
Create appropriate guides for different stakeholders accessing the system to dovetail with different access rights

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 Associated with document Ref. Ares(2022)6149485 - 06/09/2022**Deliverable D6.1 – Communications Strategy**

<b>Deliverable Number</b>	D6.1	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Communications Strategy		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	4	<b>Work Package No</b>	WP6

<b>Description</b>
Report on the communication strategy for the project.

**Deliverable D6.2 – Communications report 1**

<b>Deliverable Number</b>	D6.2	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Communications report 1		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	12	<b>Work Package No</b>	WP6

<b>Description</b>
Document of the communication report for the first year of the project.

**Deliverable D6.3 – Gaps and Opportunities assessment**

<b>Deliverable Number</b>	D6.3	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Gaps and Opportunities assessment		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	9	<b>Work Package No</b>	WP6

<b>Description</b>
Report on impact Pathways for high potential Key Exploitable Results of the project.

**Deliverable D6.4 – eLearning portal**

<b>Deliverable Number</b>	D6.4	<b>Lead Beneficiary</b>	6. UCC
<b>Deliverable Name</b>	eLearning portal		
<b>Type</b>	OTHER	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	45	<b>Work Package No</b>	WP6

<b>Description</b>
An on-line repository containing all the learning materials co-designed and developed with stakeholders for the Training of Trainers” programme to be hosted on an established, appropriate website.

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 Associated with document Ref. Ares(2022)6149485 - 06/09/2022**Deliverable D6.5 – Business development plan**

<b>Deliverable Number</b>	D6.5	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Business development plan		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP6

<b>Description</b>			
<p>A business development plan will be developed to cover new data, interoperable analytical tools and the exploitation of the data fabric/ mesh. The potential of the tools and systems will be examined in both the public sector and the private sector, e.g. discussion around the best way to scale the use of tools further developed and made interoperable in the project.</p> <p>The plans will include:</p> <ul style="list-style-type: none"> <li>• Business model canvas for the identification of the market ecosystem (this may be in the public or private sectors)</li> <li>• Competition analysis</li> <li>• Identify any patent/ protection needs of products</li> <li>• Identify audiences/ end user markets</li> <li>• Pricing potential for identified audiences</li> <li>• Delivery mechanism (e.g. SaaS, external platform, licenses, subscription etc.)</li> <li>• Continuity of tools (remain in-house, development or exploitation by external partners)</li> <li>• Go-to-market planning (if appropriate)</li> </ul>			

**Deliverable D6.6 – Communications report 2**

<b>Deliverable Number</b>	D6.6	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Communications report 2		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP6


<b>Description</b>			
Document of the communication report for the second year of the project.			

**Deliverable D6.7 – Communications report 3**

<b>Deliverable Number</b>	D6.7	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Communications report 3		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP6

<b>Description</b>			
Document of the communication report for the third year of the project.			

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### Deliverable D6.8 – Communications report 4

<b>Deliverable Number</b>	D6.8	<b>Lead Beneficiary</b>	17. OASIS
<b>Deliverable Name</b>	Communications report 4		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP6

<b>Description</b>
Document of the communication report for the fourth and final year of the project.

### Deliverable D6.9 – Legacy document on the capacity/skills for risk and adaptation management

<b>Deliverable Number</b>	D6.9	<b>Lead Beneficiary</b>	6. UCC
<b>Deliverable Name</b>	Legacy document on the capacity/skills for risk and adaptation management		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP6

<b>Description</b>
This report will contain a set of recommendations on how capacity / skills and related evolving pathways in the development of governance and technological frameworks can better address the challenges of integrated responses to risk and adaptation management.

### Deliverable D7.1 – Consortium Agreement including IPR, Grant Agreement signed

<b>Deliverable Number</b>	D7.1	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Consortium Agreement including IPR, Grant Agreement signed		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	1	<b>Work Package No</b>	WP7

<b>Description</b>
Document of the Consortium Agreement signed by all beneficiary and associated partners

### Deliverable D7.2 – Project working plan with risk management and mitigation

<b>Deliverable Number</b>	D7.2	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Project working plan with risk management and mitigation		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	3	<b>Work Package No</b>	WP7

<b>Description</b>
Document of the project working plan risk management and mitigation set-up

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### Deliverable D7.3 – Data management plan

<b>Deliverable Number</b>	D7.3	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Data management plan		
<b>Type</b>	DMP — Data Management Plan	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	5	<b>Work Package No</b>	WP7

<b>Description</b>
Document of the Data Management Plan

### Deliverable D7.4 – Mid-term report, covering months 1 - 16

<b>Deliverable Number</b>	D7.4	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Mid-term report, covering months 1 - 16		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	16	<b>Work Package No</b>	WP7

<b>Description</b>
Document of the mid-term report from the first reporting phase.

### Deliverable D7.5 – Mid-term report, covering months 17-32

<b>Deliverable Number</b>	D7.5	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Mid-term report, covering months 17-32		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	32	<b>Work Package No</b>	WP7

<b>Description</b>
Document of the mid-term report from the second reporting phase.

### Deliverable D7.6 – Final report covering full project

<b>Deliverable Number</b>	D7.6	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Final report covering full project		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP7

<b>Description</b>
Document of the mid-term report from the final reporting phase.

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### Deliverable D7.7 – Project legacy documented and implemented

<b>Deliverable Number</b>	D7.7	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	Project legacy documented and implemented		
<b>Type</b>	R — Document, report	<b>Dissemination Level</b>	PU - Public
<b>Due Date (month)</b>	48	<b>Work Package No</b>	WP7

<b>Description</b>
Document describing the maintenance of the project's outputs accessibility and support for the dissemination of the products, and proper management of the IPR beyond the lifespan of the project

### Deliverable D8.1 – OEI - Requirement No. 1

<b>Deliverable Number</b>	D8.1	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	OEI - Requirement No. 1		
<b>Type</b>	ETHICS	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	3	<b>Work Package No</b>	WP8

<b>Description</b>
An independent Ethics Advisor with expertise in AI and ML to monitor the ethical concerns related to this project must be appointed. The applicant is invited to send the CV of the suggested Ethics Advisor and discuss their appointment with the Project Officer as soon as possible.

### Deliverable D8.2 – OEI - Requirement No. 2

<b>Deliverable Number</b>	D8.2	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	OEI - Requirement No. 2		
<b>Type</b>	ETHICS	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	12	<b>Work Package No</b>	WP8

<b>Description</b>
Periodic reports from the Ethics Advisor must be provided at month 12.

### Deliverable D8.3 – OEI - Requirement No. 3

<b>Deliverable Number</b>	D8.3	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	OEI - Requirement No. 3		
<b>Type</b>	ETHICS	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	24	<b>Work Package No</b>	WP8

<b>Description</b>
Periodic reports from the Ethics Advisor must be provided at month 24.



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**Deliverable D8.4 – OEI - Requirement No. 4**

<b>Deliverable Number</b>	D8.4	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	OEI - Requirement No. 4		
<b>Type</b>	ETHICS	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	36	<b>Work Package No</b>	WP8

<b>Description</b>
Periodic reports from the Ethics Advisor must be provided at month 36.

**Deliverable D8.5 – OEI - Requirement No. 5**

<b>Deliverable Number</b>	D8.5	<b>Lead Beneficiary</b>	1. TUBS
<b>Deliverable Name</b>	OEI - Requirement No. 5		
<b>Type</b>	ETHICS	<b>Dissemination Level</b>	SEN - Sensitive
<b>Due Date (month)</b>	3	<b>Work Package No</b>	WP8

<b>Description</b>
Periodic reports from the Ethics Advisor must be provided at month 3.

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## LIST OF MILESTONES

Milestones					
<i>Grant Preparation (Milestones screen) — Enter the info.</i>					
Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
1	RWL framing and actors involved	WP1	4-GECCO	RWL and meeting calendar definition, multi stakeholders list available	10
2	RWL operative and stakeholders involved	WP1	4-GECCO	Stakeholders Agreements signed	8
3	Periodic report #1 on outcomes of the RWL co-production process	WP1	-	Report	12
4	Periodic report #2 on outcomes of the RWL co-production process	WP1	-	Report	23
5	Periodic report #3 on outcomes of the RWL co-production process	WP1	-	Report	36
6	Periodic report #4 on outcomes of the RWL co-production process	WP1	-	Report	46
7	Evaluating the impact/ lessons learnt from the application of the governance mechanisms in RWL	WP1	5-IASS	Report	48
8	Multi-criteria assessment based on the FAIR framework ready for evaluation	WP2	4-GECCO	Report	18
9	At least two manuscripts on the update of two tools submitted	WP2	3-DTU	proof of submission	30
10	interoperability demonstration factsheets ready for evaluation	WP2	14-GFZ	Report	36
11	RISK-TANDEM Framework	WP3	5-IASS	Report	15
12	Scoping consultation with RWL and mapping of context	WP3	5-IASS	Meeting minutes	13

<b>Milestones</b>						
<i>Grant Preparation (Milestones screen) — Enter the info.</i>						
<b>Milestone No</b>	<b>Milestone Name</b>	<b>Work Package No</b>	<b>Lead Beneficiary</b>	<b>Means of Verification</b>	<b>Due Date (month)</b>	
13	Engaging with stakeholders in RWL in a co-productive mode	WP3	5-IASS	Documentation of co-production activities	30	
14	Updated (proved and tested) RISK-TANDEM Framework	WP3	5-IASS	Report	41	
15	TANDEM transdisciplinary knowledge co-production framework refined and iteratively applied step 1	WP4	-	Report	15	
16	TANDEM transdisciplinary knowledge co-production framework refined and iteratively applied step 2	WP4	-	Report	25	
17	TANDEM transdisciplinary knowledge co-production framework refined and iteratively applied step 3	WP4	-	Report	35	
18	TANDEM transdisciplinary knowledge co-production framework refined and iteratively applied step 4	WP4	-	Report	45	
19	Scoping consultation with RWL and mapping of capacity development needs begins	WP4	-	Meeting minutes	9	
20	Updated (proved and tested) TANDEM knowledge co-production cycle	WP4	-	Report	41	
21	DATA-FABRIC High Level Design complete	WP5	15-52N	HLD-DF published	21	
22	DATA-FABRIC Low Level Design complete	WP5	15-52N	LLD-DF published	24	
23	DATA-FABRIC commissioned	WP5	15-52N	DATA-FABRIC Acceptance Test Report published	27	

<b>Milestones</b>						
<i>Grant Preparation (Milestones screen) — Enter the info.</i>						
<b>Milestone No</b>	<b>Milestone Name</b>	<b>Work Package No</b>	<b>Lead Beneficiary</b>	<b>Means of Verification</b>	<b>Due Date (month)</b>	
24	RWL Use Cases configured	WP5	15-52N	RWL Use Case Acceptance Test Report published	36	
25	Upgrades in DATA-FABRIC and related operational processes	WP5	15-52N	Change Control documents	48	
26	Communications Strategy completed	WP6	-	Report	4	
27	eLearning portal completed	WP6	6-UCC	Report	45	
28	Business Development Plan completed	WP7	-	Report	48	
29	Data and risk management plans drafted	WP7	1-TUBS	Report	2	
30	Mid-term project reports drafted and reviewed period 1	WP7	1-TUBS	Report	14	
31	Mid-term project reports drafted and reviewed period 2	WP7	1-TUBS	Report	30	
32	Final project reports drafted and reviewed	WP7	1-TUBS	Report	46	

## LIST OF CRITICAL RISKS

<b>Critical risks &amp; risk management strategy</b>				
<i>Grant Preparation (Critical Risks screen) — Enter the info.</i>				
<b>Risk number</b>	<b>Description</b>	<b>Work Package No(s)</b>	<b>Proposed Mitigation Measures</b>	
1	Limited participation and commitment to RWLs	WP1	We closely collaborate with many organisations, networks and associations which are critically important for the project. RWLs build on extensive previous co-operations and	

<b>Critical risks &amp; risk management strategy</b>			
<i>Grant Preparation (Critical Risks screen) — Enter the info.</i>			
<b>Risk number</b>	<b>Description</b>	<b>Work Package No(s)</b>	<b>Proposed Mitigation Measures</b>
	(WP1) by practice partners and other stakeholders (low/high)		trusted relationships. The quality and level of engagement will be continuously monitored and assessed by RWL managers who will also ensure that a wide rand or partners are activated and engaged (mitigated)
2	Difficulty to address stakeholders' needs in RWLs (High / Low)	WP1	The project design foresees this – WP4 along with the dissemination activities and the management structure is in fact constructed to mitigate this and potentially draw lessons from it (mitigated).
3	Lack of accessibility of data/tools for development and demonstration	WP2, WP5, WP4, WP3	The project consortium team already has screened for the availability of methods, data and tools when writing this proposal. Concepts, methods, models and tools envisaged to exemplify interoperability or to be further developed in RWLs are developed/owned by project partners (mitigated).
4	COVID19 or other pandemics may prevent physical events (or prohibit travel by some attendees). (Med. / Low)	WP2, WP5, WP4, WP1, WP7, WP3, WP6	Social distancing requirements may persist in the future. In preparing physical events, we will strictly follow the regulations of the country involved, and guidelines of the host institution. We will ensure remote access to attendees who are unable to attend physically and will have a backup plan so that events can be switched to remote if necessary. (mitigated).
5	Personnel involved not able to fulfill task / staff changes or more efforts needed to complete the task, higher costs (Low / High)	WP2, WP5, WP4, WP1, WP7, WP3, WP6	The key staff was selected for their expertise. Nevertheless, the consortium includes other expert staff who could take over key roles. Science WPs have co-lead who can manage WP during absence of WP Leaders. All participants are experienced in multi-year projects and have their own strategies in place to mitigate risks of staff change. All tasks have been budgeted in a balanced and responsible manner. Use of resources will be monitored against work progress and overspending avoided (mitigated).
6	Dissemination, Communication, Exploitation does not reach target groups	WP6	All possible channels including social media will be used, partners have well established networks (mitigated)
7	Coordination and internal communications fail	WP7	All partners have been cooperating in other consortium projects and will support the project coordinator in case of problems
8	Conflicts & mismatched expectations across the consortium and practice partners, IPR conflict (low/ low)	WP2, WP5, WP4, WP1, WP3	Clear expectations will be established from the beginning, incl. terms of references and governance rules of the project activities. IPR will be defined in CA and will be closely monitored throughout the project by WP7 (mitigated)

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<b>Critical risks &amp; risk management strategy</b>			
<i>Grant Preparation (Critical Risks screen) — Enter the info.</i>			
<b>Risk number</b>	<b>Description</b>	<b>Work Package No(s)</b>	<b>Proposed Mitigation Measures</b>
9	DATA-FABRIC security incident or outage results in delays and increased costs	WP2, WP5, WP4, WP1, WP7, WP3, WP6	All systems have redundancy and data backup capabilities for recovery following an outage or a disaster. For the duration of DIRECTED, the level of business continuity provided will be established based on the business needs and cost. For ongoing usage beyond the DIRECTED project, business continuity will be documented in an SLA (Service Level Agreement).

## PROJECT REVIEWS

<b>Project Reviews</b>			
<i>Grant Preparation (Reviews screen) — Enter the info.</i>			
<b>Review No</b>	<b>Timing (month)</b>	<b>Location</b>	<b>Comments</b>
RV1	16		
RV2	32		
RV3	48		

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## Description of Action Part B

HISTORY OF CHANGES		
VERSION	PUBLICATION DATE	CHANGE
1.0	14.04.2022	Initial version DoA.
2.0	10.05.2022	Details added regarding sub-contracting in section 3.1 Details added regarding independent ethics advisor in section 4 Adjustments to reflect change of coordinator from GFZ to TUBS and GFZ as a beneficiary partner (sections 1.2.8 and 3.2 and Table 3.1g)
2.1	27.05.2022	Explanation for sub-contracting from partner 2/PIK added to table 3.g  Explanations regarding purchase costs for partners 9/REGIONH, 10/ARSTPC-R, 11/G&C and 14/QOMPLX added to Table 3.1h Budget mentioned in section '3.1.3 Resources to be committed' aligned with information in Annex 2  New sub-section '3.2.1 Role and budget of Associated Partners' added including a table for the budget of Associated Partners OASIS, SEI, QOMPLX and ETH. Paragraph on "Other countries and international organisations" in section 3.2 removed  Explicit indication added to section 3.1 that Article 6.2.B and 9.3 of the GA and its principles are applicable and respected during the selection of the subcontractor (i.a. best value for money, no conflict of interest) and also in table 3.1g  History of changes Table moved to the beginning of this document
2.2	31.05.2022	Details added about associated partners in section 3.2.1
2.3	14.06.2022	Associated partners SEI and QOMPLX removed from table 3.1g and included in sub-section 3.2.1 Associated partner QOMPLX removed from table 3.1h and included in sub-section 3.2.1 Numbering of partners updated and rectified in tables 3.1g,h Resources to be committed (section 3.1.3) updated according to new situation with UK consortium members as associated partners
2.4	21.06.2022	Section 4 'ethics' adjusted to explain ethics assessment. Section 5 'Security' added
3	6.7.2022	Subcontracting tasks for TUBS identified (table 3.1g) Modifications to replace partner QOMPLX with new partner 52N updating partner numbers
3.1	14.7.2022	Budget numbers updated in section 3.1.3

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**DIRECTED: DISASTER RESILIENCE FOR EXTREME CLIMATE EVENTS PROVIDING INTEROPERABLE DATA, MODELS, COMMUNICATION AND GOVERNANCE**

### 1. Excellence

In July 2021, the low-pressure system Bernd smashed several rainfall records and caused catastrophic flooding and havoc in several European countries, particularly in Germany and Belgium, with estimated losses exceeding EUR 10 billion and over 200 lives lost. Only a few weeks later, temperatures around the Mediterranean Sea rose above 40 degrees Celsius and forest fires devastated extended areas. In the North of the Greek island Euboea, already charred landscapes without trees and other vegetation to hold water and soils suffered unexpected extreme precipitation, triggering floods and landslides, causing severe damages to local settlements and infrastructures. In all three cases and many others, the impacts of recent extreme climate events on local communities have gone beyond what has been previously observed. They clearly illustrate critical need for new paradigms that integrate risk assessment, governance, communication and operational mechanisms for coping with extreme climate events throughout the *entire* Disaster Risk Management (DRM) cycle, i.e. from early warning systems (EWS) to long-term climate change adaptation (CCA) strategies. This particularly pertains to interoperability in terms of data availability, information sharing, deploying risk models, as well as coordination and communication between the many different actors. For example, in the 2021 European floods, risk managers, first and second responders, and local communities were in many places unaware of the information provided by the European Flood Awareness System (EFAS) - particularly the flash flood forecasts (ERIC) and nowcasts (ERICHA) products - and unprepared to respond to such an event effectively despite robust climate risk and adaptation information being accessible.

It is uncontested that extreme weather events like forest fires, droughts, floods, heat waves and storms are becoming more frequent and more intense, and that due to climate change we are increasingly likely to experience unprecedented impacts without substantial climate adaptation actions<sup>1,2</sup>. This includes compound extremes<sup>3</sup> and cascades of events, which are generally not accounted for by current Disaster Risk Reduction (DRR). While contemporary management of risk from natural hazards tends to focus on individual events, particular geographic areas, and disturbances to specific sectors, it is increasingly evident that risk governance, DRR and DRM urgently need to also consider cascading hazards<sup>4</sup> and multi-risk cases. In addition, weak coordination between the scientific and technical communities, sector stakeholders, and policymakers combined with gaps in inter-organisational co-operation, addressing different phases of the DRM cycle and CCA separately, hinder comprehensive responses and sustainable climate and disaster resilient solutions.

Research aligned with the Sendai Framework for Disaster Risk Reduction<sup>5</sup>, the UN Sustainable Development Goals<sup>6</sup>, the European Green Deal<sup>7</sup>, and the EU Adaptation Strategy<sup>8</sup> have recently provided critical new insights, data, tools, frameworks, methods and even networks for advancing the state of CCA and DRM in Europe and globally. Most of these outcomes have been in terms of technical innovations, including climate and emergency management services, whereas innovations in terms of novel governance and integrated DRR strategies to promote multi-risk thinking and harvest the synergies between CCA and DRM, models for engaging relevant contributors and stakeholders at all levels, and within the social and behavioural sciences have been scarce.

With “DIRECTED” we aspire to foster disaster-resilient European societies through interoperable data, models, communication and governance by: (i) expanding our capabilities to communicate, utilize and exchange state-of-the-art data, information and knowledge between the different actors in the DRM cycle, (ii) boosting the integration, accessibility and interoperability of data, models and tools supporting CCA and DRM: from early

1 IPCC. 2021. ‘Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change’. IPCC AR 6. Cambridge University Press.

2 Kreienkamp, Frank, and et al. 2021. ‘Rapid Attribution of Heavy Rainfall Events Leading to the Severe Flooding in Western Europe during July 2021’. WWA.

3 Zscheischler, J. et al. 2018. ‘Future Climate Risk from Compound Events’. *Nature Climate Change* 8 (6): 469–77. <https://doi.org/10.1038/s41558-018-0156-3>.

4 AghaKouchak, A., et al.: How do natural hazards cascade to cause disasters?, 561, 458–460, <https://doi.org/10.1038/d41586-018-06783-6>, 2018.

5 UNISDR. 2015. ‘Sendai Framework for Disaster Risk Reduction 2015–2030’. United Nations International Strategy for Disaster Reduction. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>.

6 Transforming Our World: The 2030 Agenda for Sustainable Development’. 2015. A/RES/70/1. Geneva: United Nations. <https://sustainabledevelopment.un.org>.

7 European Commission. 2019. ‘The European Green Deal, COM/2019/640

8 European Commission. 2021. ‘Forging a Climate-Resilient Europe - the New EU Strategy on Adaptation to Climate Change’. COM.

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warning systems through communication and climate change risk assessment tools, (iii) facilitating knowledge sharing, improved dialogue and cooperation encompassing actors at all governance levels based on enhanced community engagement and development of new governance and risk management strategies using a bottom-up, value-driven co-development approach and multi-criteria decision making.

#### **Box 1: Mission statements**

*In accordance with the Scope of the call, our DIRECTED Mission is to*

- overcome silos** between technical and political authorities of all levels, including organisations, sectors and disciplines by improving dialogues and communication among DRR and CCA actors and by promoting the exchange and integration of information and knowledge
- leverage synergies**, combine efforts and reduce the fragmentation within DRR and CCA domains, including addressing multi-level governance and different spatial and temporal scales
- promote multi-risk thinking** by means of a novel transdisciplinary multi-risk governance framework related to climate extremes (RISK-TANDEM) aimed at assessing, evaluating, managing and communicating multi-hazard, multi-risk issues in close collaboration with engaged stakeholders, practitioners and concerned citizens
- build capacity and lasting real-world partnerships** and collaboration between involved actors that will last beyond the project
- exploit the power of open data and open science**, improving capabilities (e.g. using a *flexible Data Fabric architecture*) to make use of scattered information for more effective decisions, including knowledge and tools developed within past, present and future research and innovation initiatives.

### **1.1 Objectives and ambition**

To achieve the above-mentioned vision and mission (Box 1), we propose a four-year project with the following **specific objectives** and *main outputs* (see also Section 2):

**(SO1) Create an overview of current knowledge, policies, tools, best practices and key actors, their interoperability, and how they influence decisions on DRR and CCA.** *We will analyse the current framing of the DRM cycle and CCA decision-making at relevant levels, including the current roles (and gaps) of state-of-the-art data, models and tools; different decision-making priorities; and the associated legal and ethical rules of operation (e.g. privacy and protection of personal data). We will also collate experiences and data from four “real-world laboratories” (RWLs) involving synergies, conflicts and trade-offs between DRM and CCA using, e.g. “forensic analysis” techniques; and use relevant SSH methods for revealing essential enablers and barriers to multi-risk governance frameworks and multi-risk thinking. [WP1,WP2, WP3].*

**(SO2) Advance the interoperability of data, models and tools.** *Based on the above-mentioned overview, we will outline new paradigms, towards robust and actionable decision-support for integrated risk reduction and improved adaptation to extreme climate events that (a) facilitate the integration of outputs within and across DRM and CCA workflows in a meaningful way to provide extended functionality for sound decision support; (b) promote the use of existing data sets, models and tools through enhanced interoperability, i.e. seamless exchange of information between models and consistent use of knowledge and data across all phases of the DRM cycle using open standards; (c) consider multi-hazards (e.g. forest fires, drought, floods, heatwaves and storms) AND their potential compoundedness. To demonstrate these new paradigms in real-life cases, a number of existing tools developed within EU and national projects will be enhanced for interoperability, including the SaferPlaces Digital Twin Solution for flood risk intelligence, the PIK seamless forecasting tool, the CLIMADA probabilistic risk assessment tool, the DCAM high-resolution damage cost assessment and adaptation model, and the Oasis-CAIMAN citizen app for disaster damage and loss recording and sharing [WP2].*

**(SO3) Co-develop a new multi-level integrated risk governance framework for the coherent integration between DRR and CCA policies and the Sustainable Development Goals (SDGs).** *Considering relevant actors at multi-levels, e.g. policy-makers, first and second responders, local communities and other key stakeholders, we will develop an innovative and integrative DRR and CCA risk-governance framework (RISK-TANDEM) for identifying tailored governance mechanisms by merging the International Risk Governance Council’s Risk Governance Framework with SEI’s TANDEM framework, the IIASA risk layering approach, and scope its alignment with other governance frameworks for DRR and CCA planning and decision-making processes. [WP3].*

**(SO4) Demonstrate the potential of transdisciplinary and multi-stakeholder co-production as a means to unpack enablers and barriers for developing transformative tools and improved risk management strategies.** *We will iteratively apply the TANDEM framework within RWLs (WP1), as means of identifying, distilling and unravelling new insights to support the co-creation of transformative tools (WP2), the data fabric (WP5) and risk*

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*governance mechanisms (WP3). Enhanced community engagement in the RWLs will facilitate better knowledge sharing, improved dialogue, integration and cooperation that encompasses actors at all levels, and ultimately strengthens synergies and coherence among them. [WP4].*

**(SO5) Leverage innovative digital architectures using data-fabric and data-mesh techniques to support integrated multi-hazard DRR and CCA workflows.** *We will provision and demonstrate an innovative digital architecture, using data fabric and mesh techniques. This will provide the ability to join data from diverse sources, transform and aggregate datasets and model results, integrate processes and allow new data analytics insights. Customized workflows for multi-hazard, multi-risk DRR and CCA tasks support process transparency, reproducible results and increasing accountability of actors within a structured risk-governance framework. The resulting outcome will be the breaking down of technical barriers between stakeholders, and improved cooperation and exchange of data and information for operational, research and strategic purposes. Measurable results: (i) DATA-FABRIC configured to demonstrate the DIRECTED RWL use cases; (ii) A DATA-FABRIC architecture that is open and flexible allowing rapid expansion and evolution as required by diverse uses [WP5].*

**(SO6) Demonstrate the feasibility for integrated cross-sectoral and transdisciplinary coordination of the DRM cycle (from prevention, preparedness, to response, and recovery) in the framework of real-life case scenarios based on interoperable tools (SO2) and multi-level risk governance frameworks (SO3).** *Based on simulations, experiments and demonstration carried out in our four RWLs (involving first and second responders and multi-level actors: policy-makers, technical and scientific communities, citizens, the private sector [e.g. insurance] and other key local stakeholders) and using the quantitative and qualitative (SSH) innovations produced within DIRECTED, new governance strategies and robust decision-support methodologies for integrated risk reduction and improved adaptation to climate extreme events will be proposed and co-assessed. This will include the potential benefits of enhanced communication, utilization and exchange of state-of-the-art data, information and knowledge between the different actors in the DRM cycle, and of improved cost-benefit and cost-effectiveness analyses of investments in prevention and regulatory risk-reduction strategies for protecting people and nature in vulnerable areas. [WP1 with contributions from all WPs].*

**(SO7) Strengthen DRR and resilience-building in the RWLs (and beyond).** *Based on the results of (SO1) - (SO6), we will enable improved access to open, interoperable, and actionable solutions for integrated DRR and CCA, e.g. through dissemination of climate risk information; increasing capability to use state-of-the-art digital tools and geospatial information technology and facilitating training and access to state-of-the-art disaster risk modelling, relevant data and decision-support tools for the RWLs; providing guidance on methodologies and standards for DRM, climate risk assessment and governance; and capacity-building and training, e.g. among first and second responders from the RWLs in conjunction with ZARA special rescue team and others. For each RWL, we will pursue tailored pathways for establishing lasting partnerships, community engagement, dialogues and collaboration. Thus, we will optimize the project's impact on DRR and CCA practices for efficiently reducing the vulnerability to extreme - and unprecedented - climate events. We will also look at the long-term scaling dynamics of tools and systems to ensure uptake and sustainability of the outputs [WP6, 1].*

#### 1.1.1 Relation to the expected outcomes of HORIZON-CL3-2021-DRS-01

Expected outcomes	DIRECTED response
Improved dialogue and cooperation among scientific and technical communities, stakeholders, policy-makers and local communities [...]	<b>(SO3)</b> The RISK-TANDEM framework ( <b>WP3, WP4</b> ) will enable new and improved ways of facilitating transdisciplinary, science-based dialogues and risk governance in the field of extreme climate and associated events.
Enhanced community engagement for prevention, preparedness, response, recovery and learning to extreme climate events [...]	<b>(SO4)</b> RWLs ( <b>WP1</b> ) are designed to facilitate community engagement and build lasting collaboration and partnerships among DRR and CCA actors within, between and beyond the RWLs ( <b>WP4</b> ), exemplary for replication ( <b>WP6</b> ).
Strengthening of disaster risk reduction and resilience building through innovative use of media means [...]	<b>(SO2, SO5)</b> DIRECTED will deliver new and interoperable digital solutions ( <b>WP5</b> ) and tools ( <b>WP2</b> ) to enhance the capability to create actionable intelligence based on the innovative use of state-of-the-art data from scattered sources for DRR, exemplified through, e.g. the Oasis CAIMAN app.
Overview of existing knowledge, tools	<b>(SO1, SO2)</b> Generic platforms for knowledge and data sharing

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and development of new tools [...] for early warning, response and resilience / adaptation to be demonstrated in the framework of real-case scenarios designed for training addressed to first and second responders, [...]	( <b>WP5</b> ) will be developed based on analyses of existing knowledge and tools; based on the lessons learned several existing state-of-the-art tools covering the full DRM cycle are further enhanced according to a novel set of interoperability principles ( <b>WP2</b> ); these will be demonstrated and serve as focal points for training and exploitation within the RWLs ( <b>WP1, WP6</b> ).
Based on the demonstrations, development of new governance strategies and robust decision-support methodologies for integrated risk reduction and improved adaptation to climate extreme events.	( <b>SO3, SO6</b> ) DIRECTED is specifically designed to ‘direct’ and co-develop new governance strategies and robust decision-support methodologies for integrated DRR ( <b>WP3, WP4</b> ), their real-life adoption in the RWLs ( <b>WP1</b> ) and to facilitate their uptake and exploitation at broader levels ( <b>WP6</b> ).
Improved understanding of enablers and barriers to multi-risk governance frameworks and multi-risk thinking, by involving interdisciplinary teams in different fields, particularly the social and behavioural sciences.	( <b>SO4</b> ) DIRECTED proposes a deep transdisciplinary approach, encompassing qualitative and quantitative methods in which SSH disciplines play a crucial role for understanding, e.g. the roles of enablers and barriers for multi-risk governance ( <b>WP3</b> ) and the involvement a wide range of science-society stakeholders and multiple knowledge types ( <b>WP4</b> ). For this aim, our highly interdisciplinary consortium comprises scientific experts from different fields, local and regional authorities, practitioners and key private sector actors.
Cost-benefit or cost-effectiveness analyses of investment and regulatory strategies to protect people and nature in vulnerable areas.	( <b>SO6</b> ) Such analyses will be carried out in each of the RWLs ( <b>WP1</b> ) using enhanced versions of e.g. the CLIMADA and DCAM assessment models ( <b>WP2</b> ).

### 1.1.2 Ambition

As indicated by our vision, mission statements (see Box 1), and the associated specific objectives (see Section 1.1) DIRECTED is a highly ambitious project, which aims to significantly contribute to making Europe a “Disaster-Resilient Society”. In addition to this Destination, the proposed innovations are designed to respond to the findings of the gap analyses outlined in the Sendai Framework (Priorities 1 and 2) and IFAFRI Common Capability Gap analysis reports (Gaps 4&9). This ensures that the collaborative work we undertake is highly relevant to the various user communities involved in DRR and/ or CCA. The need for integrated multi-risk and multi-level approaches to DRR and CCA and the associated policy and governance domains, e.g., to harvest synergies, resolve conflicts and reduce fragmentation, is well documented, e.g.<sup>9</sup>. DIRECTED aims to pave the way for new collaborative paradigms that goes beyond the current state-of-the-art. Whereas technical solutions have so far been favoured as means of protecting people and property from catastrophic weather events, unprecedented extreme climate events have recently demonstrated that such solutions may no longer be enough. On this background, DIRECTED will deliver a number of key innovations to advance state-of-the-art approaches to risk governance, and to facilitate improved DRM and CCA, utilizing new digital technologies and models through the introduction of a generic data fabric/ mesh approach that allows multiple sources of data and models to be visible, actionable and communicable to multiple actors in the DRR/ CCA workflow chains.

#### Rationale and key innovations:

1. Translating climate risk information and research into policy and action has been severely lacking<sup>10</sup> (Klein and Juhola, 2014). It is acknowledged that a linear, supply-driven flow of climate risk information has limitations<sup>11</sup>. This requires a move away from “experts” or “providers” producing information for decision-making “users”, who help to simply ‘tailor’ the end-product. The **TANDEM (WP4)** framework<sup>12</sup> and the

9 Street, R. B. et al. (2019) How could climate services support disaster risk reduction in the 21st century, International Journal of Disaster Risk Reduction, 34, 28–33, <https://doi.org/10.1016/j.ijdrr.2018.12.001>

10 Klein, R. J. T. and Juhola, S. (2014). A framework for Nordic actor-oriented climate adaptation research. Environmental Science & Policy, 40, 101–115. DOI: 10.1016/j.envsci.2014.01.011

11 Brasseur, G. P. and Gallardo, L. (2016). Climate services: Lessons learned and future prospects. Earth’s Future, 4(3), 79–89. DOI: 10.1002/2015EF000338

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derived **RISK-TANDEM (WP3)** framework (which will be one of the new innovations of DIRECTED) will be applied, tested and refined in this project. Both represent a major shift away from a focus on ‘products’ to a transdisciplinary knowledge co-production ‘process’ in which co-design and collaborative learning is the defining characteristic, and both stakeholders and modellers alike build their capacity to understand the decision context and the potential of data and tools<sup>10</sup>.

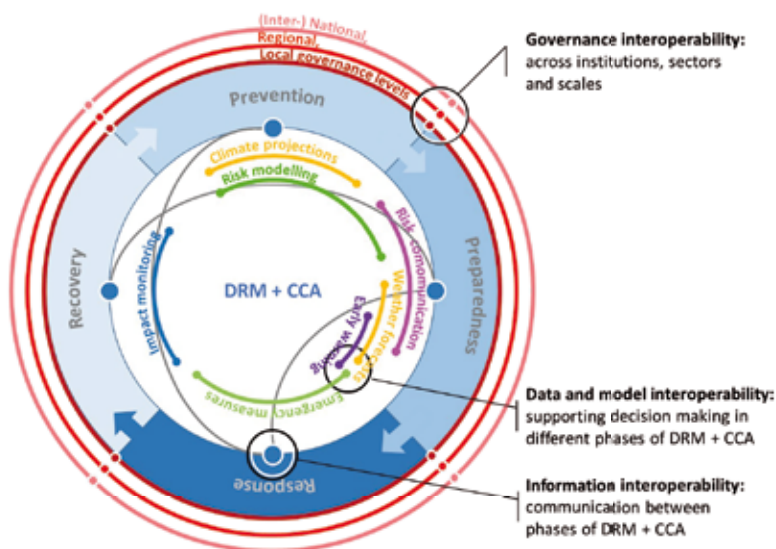
- By forging interoperability standards aimed at scientific and IT communities, we will seek to trial and enable tools and data to be responsive to one another thus providing examples of how tools developed through the H2020, Horizon Europe and other programmes can become interoperable and thereby actionable tools to assist the DRR/ CCA communities in solving real-world challenges, DRM and DRR problems, as well as providing actionable results to encourage climate adaptation and to promote “multi-risk thinking”. **Table 1 provides an overview of the planned technical innovations** in this regard, including the expected development in Technology Readiness Levels (TRLs) over the course of the project.
- The complexity of access to, management of, and appropriate communications on the basis of multiple sources on data, models, information and scientific results will be reduced through use of novel data science techniques, e.g., a data fabric and mesh techniques, and the creation of an innovative digital architecture to do this. See Section 1.2.4 (DATA-FABRIC).

DIRECTED will not stop at the improvement of tools, systems and techniques but will seek to use and integrate them into the real-world context in the RWLs. Through the labs co-production process we will be able to test, reflect and feedback experiences to continuously improve outputs by the final stages of DIRECTED.

## 1.2 Methodology

### 1.2.1 Concept

DIRECTED builds on a highly *interactive transdisciplinary knowledge co-production process* and an innovative *digital architecture for process integration and analytics* aimed at facilitating enhanced knowledge-based dialogues, communication, cooperation and “interoperability” on the three levels that are essential for integrating DRR and CCA related to extreme climate events in a multi-scale and multi-risk perspective: **1) Governance interoperability**, **2) Information interoperability**, and **3) Data and model interoperability** (Figure 1).



For this aim, experts and expertise from the Social Sciences and Humanities (SSH) provided from within the consortium will play a crucial role. *Governance interoperability* seeks to integrate relevant actors, responders and stakeholders across institutions, sectors and scales through suitable governance and enabling mechanisms, suggestions for adjusted legal frameworks and tailored responsibilities and financing arrangements. *Information interoperability* pursues a verifiably and timely information exchange between all phases of the DRM cycle through improved dialogues and

Figure 1. The DIRECTED concept.

communication between DRR and CCA communities across multiple levels, such as resolving issues in understanding early warnings and turning relevant information into effective and coordinated actions. In this regard, model-based information such as flood forecasts, disaster risk assessments, climate projections and cost-

<sup>10</sup> Daniels, E., et al. (2020). Refocusing the climate services lens: Introducing a framework for co-designing “transdisciplinary knowledge integration processes” to build climate resilience. *Climate Services*, 19. 100181. DOI: 10.1016/j.cliser.2020.100181

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benefit analyses play a critical role in decision-support in different phases of the integrated DRM-CCA cycle. *Data and model interoperability* addresses the need for combining data and models (e.g. multi-risk), including proprietary resources, from/at different domains, providers, resolutions, vintages, sources, formats (and more) into highly customized DRR and CCA workflows given the frequent absence of standards, and the lack of a common understanding and infrastructure. This includes but is not limited to differences with respect to purpose, spatio-temporal scales, resolutions and conflicting model assumptions. DIRECTED aims to pave the way for the generic use of existing state-of-the-art data and models combined by means of open standards for information and data exchange; and to demonstrate the feasibility thereof when available tools are made interoperable. Four RWLs form the core of our DIRECTED approach and frame the settings for co-creating solutions and demonstrating integrated DRM and CCA, including our new and enhanced tools and processes. Our four laboratories cover representative European geographies (Scandinavia, Central and Eastern Europe and the Mediterranean) and are characterized by a diversity of challenges from extreme climate events (including compound events), multi-risks, climate adaptation options, scales (from local to regional), and institutional and legal settings. This approach ensures that co-designing solutions to real-world challenges is central, and that stakeholder involvement occurs throughout the project. The DIRECTED consortium includes at least one expert representative for each of our RWLs as well as one or more key partners representing local authorities, first or second-responders or a relevant actor from the private sector (e.g. insurance). In general, the consortium comes with an excellent network to reach out to all relevant actors in the RWLs and beyond.

### 1.2.2 Methodology

DIRECTED is a 48 month project and will be implemented by five closely interrelated and interdisciplinary work packages (Figure 2) with additional work packages dedicated to “C&D&E and Impact” and “Management and coordination”. All innovation work packages (**WP1 - WP5**) combine expertise from various SSH disciplines with natural, engineering and data sciences, and information technology. As outlined, the Real World Labs (**WP1**) play pivotal role because it is here where innovations regarding data and model interoperability, governance, and knowledge co-creation as well as data-fabric technologies are co-developed and demonstrated in the context of real-world DRR and CCA problem settings. The RWLs also provide the context for science-driven and transdisciplinary dialogues to diagnose societal requirements and needs, dynamic knowledge co-production with stakeholders and practitioners from authorities, first and second responders, (re-)insurance and other representatives from the private sector and communities. Closely linked to **WP6**, the RWL will organize demonstration and training events to collect feedback on project developments and for capacity building among users. The DATA-FABRIC (**WP5**) is a cross-cutting work package, which provides technical capabilities to support the solution of DRR and CCA problems along specified workflows. Accordingly, the architecture will be designed around the RWLs within DIRECTED’s co-creation process. **WPs 2-4** are thematic work packages that address the above-mentioned levels of interoperability needed for integrated DRR and CCA: interoperability of data and models (**WP2**), multi-level multi-risk governance (**WP3**), and transdisciplinary knowledge co-production (**WP4**). The overarching **WP6** works on maximising the impacts of the project results and outcomes by aligned dissemination, communication and exploitation measures complemented by knowledge transfer and training activities. The management and coordination work package (**WP7**) oversees and directs the project’s processes and developments as a whole and takes care of efficient project implementation and quality control. The DIRECTED workflow and tasks are described in detail in Section 3.

#### **Box 2: Impact on Real World Labs**

The RWLs will be **focal points** for the expected impacts of DIRECTED (see Section 2), and for **monitoring** the effectiveness of the proposed multi-risk governance mechanisms (**WP3**). Devoted activities will serve to enhance **stakeholder and community engagement**, e.g. the transdisciplinary co-development process, which will be used in all our methods and tools development, and to stimulate **real-world partnerships and collaboration** that will last beyond the project. To establish clear linkages and synergies within as well as between WPs, a **co-production cycle** will be defined and periodically reviewed for each RWL, defining activities, allocation of persons, organization and participation in joint **events** (i.e. workshops, meetings, serious gaming, reviews and evaluation of the project produced models and tools). A conceptual approach to better understand the multi-risk governance frameworks related to climate extremes will be applied in all RWLs, aimed at **shifting perceptions** from single risk to **multi-risk** thinking over varying timelines and geographic resolutions across the DRM + DRR + CCA cycle. Synergies and trade-offs will be explored. These new insights will lead to improved strategic (integrated) decision-making at long and immediate time scales. Focus will be on **community engagement** for prevention, preparedness, response, recovery and learning from extreme climate events and on **overcoming silos** between technical & political authorities of all levels, e.g. organisations, sectors and disciplines.

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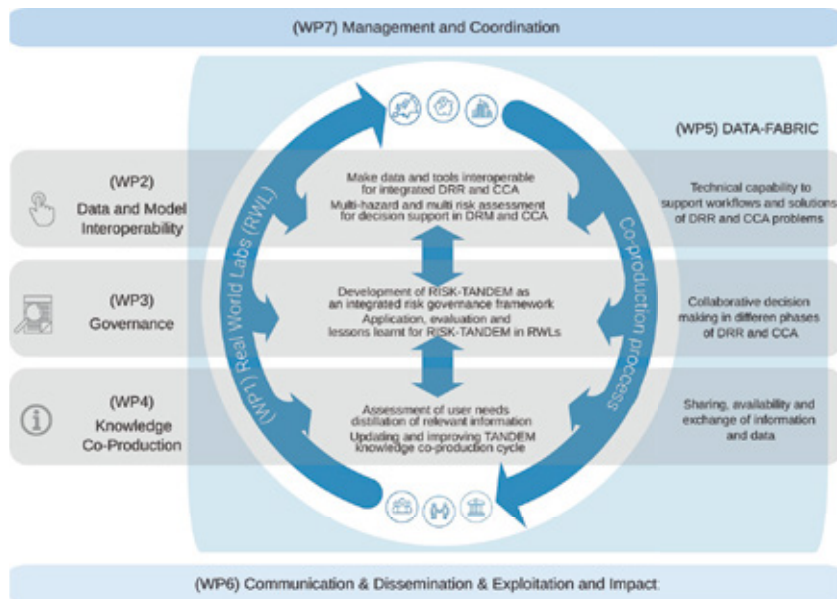


Figure 2. Overview of DIRECTED main building blocks and approach.

### 1.2.3 Real World Labs

The RWLs (**WP1**) create a collaborative environment for **learning and innovation**, and will promote **multi-level risk governance** among actors in the DRM + DRR + CCA cycle through demonstration and training. The four RWLs represent different European regions, climate change hotspots and multi-risks (Figure 3).

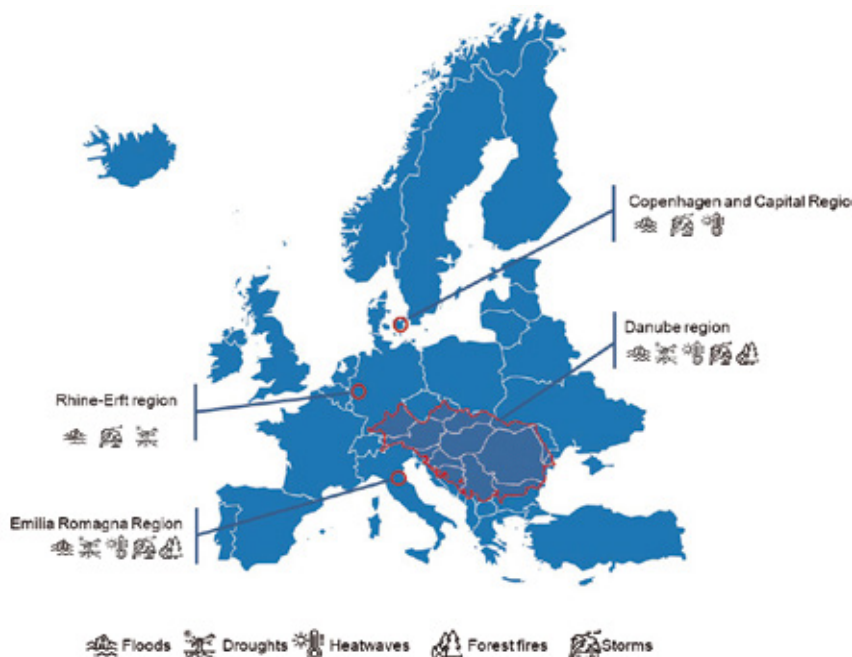


Figure 3: RWLs in European geographies and extreme climate event profiles

All the RWLs have been selected in the context of **real-life cases**, and particularly address the first and second responders such as (national, regional, local) authorities, citizens, volunteers, and business sectors. Each RWL is led by an accountable practice partner. Serving as “lab manager” and **WP1** Leader, consortium partners from GECO will ensure **coherence** among the RWLs within the inception, development and evaluation phases, and facilitate **connections** with other WPs, particularly with **WP3** and **WP4** (i.e. to frame the RWL inside the RISK-TANDEM Framework and manage stakeholder interaction), and **WP2** and **WP5** (i.e. feedback and demonstration of interoperable multi-risk models and tools).

**RWL-1: Copenhagen and the Capital Region**

**Challenges:** Copenhagen and the surrounding Capital Region of Denmark are estimated to hold some of the highest flood damage potential amongst countries bordering the Baltic Sea. Due to climate change, changed rainfall patterns combined with a heightened frequency and intensity of cloudbursts are increasingly leading to overflows from streams and sewer systems, impacting densely populated and rural areas in the region, e.g. as was the case of the 2011 cloudburst event that caused insured losses of €700M in Copenhagen. Recently drought has emerged as another critical factor to consider (e.g. 2018). The large and compound diversity of climate-related hazards combined with the exceptionally high concentration of people, valuable assets and critical infrastructure in Copenhagen and the Capital Region urgently necessitates effective and coordinated DRM and CCA. Currently, major challenges relate to governance and policy integration, and to coordination and collaboration across municipal boundaries as the enactment, funding and planning of, e.g. climate adaptation in Denmark is carried out at the municipal level, often in collaboration with privatised water utilities, within a broad national and legal framework. In some cases, this leaves climate adaptation planning in an institutional void. Also, emergency response services are principally anchored at the municipal level. As a result, overall risk governance, impact assessment models, data availability, emergency preparedness, adaptive capacity and even community involvement and risk acceptance levels often vary across administrative borders, hindering effective DRR of current and future pressures from climate extremes. **Expected outcomes:** This RWL will employ the RISK-TANDEM framework as means of co-innovating new real-life governance strategies and robust decision-support methodologies for integrated risk reduction and improved adaptation to climate extreme events at the regional and local levels. Specifically, the RWL will use the knowledge, participatory and technical innovations from DIRECTED to reconcile the key aspects of “interoperability” that currently serves as a barrier for effective DRR. The enhanced and interoperable model and data-transformation components developed in **WP2** and **WP5** will be demonstrated and co-evaluated at different scales and levels. New and improved practices, dialogues and collaboration between first and second responders, scientific and technical communities, local policy-makers, communities and other stakeholders will be pursued in order to build lasting partnerships and direct the rapid deployment of the new innovations.

**RWL-2: Emilia Romagna Region**

**Challenges:** The Civil Protection of the Emilia-Romagna Region (ARSTPC-ER) together with the ARPAE Hydrometeo Service Civil Protection Functional Centre are responsible for DRR related to climate risks. This includes early warning, DRM systems and CCA planning. The region is susceptible to a multitude of natural hazards including extreme rainfall events, marine incursions, coastal erosion and wildfires. The dominant erosive phenomena and the morphological structure of the territory make a large part of the coastline prone to marine incursion, which is exacerbated by the rising sea levels and increasing frequency and intensity of extremes. The risk of flooding is widespread and particularly high during compound events and extreme marine-weather events. It is aggravated by the inefficiency and/or inadequacy of urban drainage systems in some places. Likewise, the risk of wildfires is particularly high during summer as forests and densely populated residential areas are highly co-located along the coastline. To mitigate the diverse risks, effective warning systems are critically needed, based on short and medium-term (seasonal) forecasts with high spatial resolution. It has also been pointed out that there is a need for improving the coordination between the various first responders (public bodies, service managers, volunteers) in case of extreme events to support actions in the emergency phase, based on an effective and coordinated analysis of a large diversity of data from monitoring networks (wind, temperature and rain gauges, hydrometers, wave meters, tide gauges) and modelling tools for real time data integration and forecasting. Similarly, there is a need for pre-emptive damage assessment tools to support public administrations in choosing medium and long-term prevention measures, fostering adaptation to changing risks of floods and wildfires, particularly in view of climate change. A challenge for local governance of disaster risks is the limited ability to coordinate and support multiple stakeholders in both early warning and when planning climate change mitigation and adaptation. The lack of capacity building and cultural awareness among multiple stakeholders concerning climate change threats currently seems to be a critical barrier in implementing integrated DRR and CCA strategies. **Expected outcomes:** The RWL will address the above-mentioned challenges, increase knowledge and build capacity towards new and existing DRR and CCA tools and models for supporting both early warning and long-term CCA strategies. DIRECTED will also increase awareness of the importance of interoperability-deployed dataset, tools and workflows for a more effective implementation of integrated DRR and CCA strategies. Improved knowledge on the physical multi-hazards and multiple risks under different climate change scenarios will particularly support capacity-building in structural and non-structural measures for resilience.



### **RWL-3: Danube Region**

**Challenges:** In total, 19 countries and 81 million people share the Danube River Basin, which makes it the world's most international river basin.. Recent studies show that climate change has already impacted the frequency and severity of hydroclimatic extremes in the Danube basin, challenging existing protective measures for residential buildings, industry and infrastructure. For example, in the last three years, as well as severe local flooding in several countries, extreme droughts and heatwaves have led to reduce water levels in summer along with associated economic and ecological effects. In 2019 and 2020, the Delta Danube Nature Reserve in Romania accounted for almost half of the total burnt area within Natura 2000 sites in Europe.<sup>13</sup> A variety of private and public institutions pursue better technologies and data to support risk assessment of future events for long term adaptation and (financial) resilience building. As the Danube region is a transboundary river basin, DRR has to be actioned and coordinated at different administrative levels. However, as the Danube region is also characterised by a very large and fragmented official and community environment, the role of liaison is often bridged by dedicated professionals in the region, organised on a grassroots basis. As a result, basin-wide assessments and scientific results on climate change impacts and possibilities for DRR are generally rarely taken up or indeed included in current risk-management and emergency strategies. Finally, experience from emergencies over the last decade have shown that in addition to professional state forces, specially equipped and mentally-prepared volunteer and professional rescue groups were necessary to reach local communities. Extreme climate events point to the importance of psychological preparation for helpers, also. As a result, in many places even local rescue-teams receive theoretical and practical training to prepare for the impact of climate change-induced extremes. **Expected outcomes:** A multitude of data, models and tools for risk-management have been gathered and/or were developed in the past decade. In this RWL, we will focus on the multi-hazard-and-risk model-suite Future Danube Model (FDM)<sup>14</sup> and its regional uptake, e.g. as means of supporting innovative DRR strategies. The FDM will enable seamless predictions of extreme events such as floods, droughts, heatwaves, consistently across space-and-time scales for the Danube basin. A refinement of the FDM framework will be conducted in a cooperative process with the relevant actors. A wide range of sectors and their requirements will be approached and analysed, including stakeholders from the local communities, practitioners, civil protection organizations, regional authorities, and members of the private sector. Greater recognition and collaboration for DRR and CCA strategies and support for the further integration of the needs of the different local to regional stakeholder groups will be facilitated and numerical tools made interoperable. Such enhanced models will support the evaluation and improvement of existing national and local early warning systems in terms of accuracy of prediction, as well as the preparation of targeted risk communication and training activities. This will ensure greater transparency and accessibility of information on the impact of extreme events for all parties, so that more people and institutions are enabled to make data-driven and coordinated decisions for climate risk management. In the longer term, this is expected to contribute to active partnerships between public administration and private institutions, like the insurance industry, for DRR and CCA strategies. Furthermore, the integrated risk governance framework RISK-TANDEM will leverage synergies, strengthen community engagement, promote multi-risk thinking, and facilitate the transboundary management of natural hazards and risks.

### **RWL-4: Rhine-Erft Region**

**Challenges:** The Erft river catchment was among the most affected regions by the flood in July 2021. The hydrological responses to extreme rainfall (up to 200 mm within 24 hours) produced unprecedented flooding along the Erft river and its tributaries causing havoc, huge economic losses and loss of life. While the risk of intense flood events is especially high for the upper reaches, in the lowland part of the catchment the opposite extreme, i.e. drought risk is much more severe. Due to ongoing open pit mining activities and related groundwater pumping, the Erft river does not have contact to the groundwater in most parts of the lowland catchment and no baseflow can be maintained during meteorological droughts. Both hydrological extremes impose particular challenges to the communities living and working in, and managing, the Erft catchment. A major challenge is related to the question of how unprecedented floods like those in July 2021 need to be considered in flood frequency statistics, risk assessments and ultimately in flood risk management and governance. The definition of worst case scenarios will need to consider climate change projections to derive DRR strategies covering structural and non-structural measures. It is acknowledged that no structural measure would have been able to control the amount of runoff generated from precipitation in July 2021. Therefore, risk awareness and its communication needs significant improvements to enhance the management of flood events in the future. Learnings from past events must be accounted for in risk governance processes. Further, by the end of the 2020s the end of open pit mining will

13 San-Miguel-Ayanz, J., et al.: Forest Fires in Europe, Middle East and North Africa 2020, EUR 30862 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-42351-5, doi:10.2760/216446, JRC126766.

14 Hattermann, F. E., et al.: Simulation of flood hazard and risk in the Danube basin with the Future Danube Model, Climate Services, 12, 14–26, <https://doi.org/10.1016/j.cliser.2018.07.001>, 2018.

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significantly change the runoff regime in the lower catchment area. Water pumped out of open pit mines currently contributes 70% of the Erft river discharge in more than one third of the catchment. In view of such structural changes, the assessment of future drought-risk is challenging and poses important requirements for integrated multi-risk governance. **Expected outcomes:** The RWL expects to enhance existing communication pathways for hydroclimatic extreme events as well as to co-develop an integrated risk-management strategy that is coordinated with relevant stakeholders from both DRR and CCA domains and citizens in the Erft catchment. From a scientific point of view, the aim is to investigate how climate-change impacts will affect the frequency and severity of future floods to obtain a robust estimation of design values for structural and non-structural measures. For this purpose, new data sources and products, e.g. seamless forecasts will be used by existing numeric flood and water resources management models. Existing hydrological models are based on the NASIM model software and can be used and further developed in the framework of the project. Moreover, we expect to get a better understanding of climate-change impacts on different planning scenarios of the Erft river. Finally, the Erft water board envisages to build capacity and become part of a lasting European RWL partnership.

#### 1.2.4 DIRECTED innovations beyond the state-of-the-art

##### Data and model interoperability [WP2]

**Rationale and state-of-the-art:** Considerable amounts of hazard/disaster-related data are currently available from a large diversity of sources, including the Copernicus program, but they are often dispersed geographically, recorded and stored in diverse formats, or owned by different entities making them difficult to access. The success of both DRM and CCA depends on the ability of multiple stakeholders to integrate, reuse and disseminate disaster-related data. Likewise, for disaster-risk governance, organisations require resources and capabilities of other stakeholder institutions on a regular, operational basis, thus making effective collaboration and inter-operation essential. In contrast, barriers in sharing and coordinating information before and after hazard events often evoke failures in prevention, preparedness and response to extreme hazard events<sup>15</sup>. For this reason, the Sendai Framework highlights the need for findable, accessible, interoperable and reusable (FAIR) data, and such data contribute to the SDG targets 11.5 and 13.1<sup>16</sup>. Several key policy instruments have therefore been implemented by the EC to promote the adoption of Application Programming Interfaces (APIs) for the publication of public-sector information and for public- service provision<sup>17</sup> with API offering modular, reusable, and easily scalable solutions (e.g. the EU Directive 2019/1024 on open data and reuse of public sector information, the EU eGovernment Action Plan 2016–2020, the eGovernment Declaration 2017-2021<sup>18</sup> and the European Interoperability Framework (EIF)<sup>19</sup>).

DIRECTED will develop a compendium of standards for the exchange of data and information among any combination of models, databases and analytical and visualization tools for the DRR and CCA domain. This will build on the guiding principles for FAIR data and associated metrics for evaluating compliance<sup>20</sup> and frameworks for assessing interoperability in the disaster domain<sup>21,22</sup> we will take stock of available interoperable standards and identify reusable interoperability patterns, i.e. **interoperability best practices**, which are applied to existing tools and data to enhance their functionalities and usability for DRR and CCA. To demonstrate interoperability patterns in real-life scenarios, several existing state-of-the-art tools developed within EU and national projects will be enhanced for interoperability and co-assessed in the RWLs (**WP1**). For different tools used in the individual phases

15 Bharosa, N.; Lee, J.; Janssen, M. Challenges and obstacles in sharing and coordinating information during multi-agency disaster response: Propositions from field exercises. *Inf. Syst. Front.* 2010, 12, 49–65.

16 UN Sustainable Development Goals. Available online: <https://www.un.org/sustainabledevelopment/> (accessed on 30 December 2020).

17 Vaccari, L. et al. Application Programming Interfaces in Governments: Why, What and How; EUR 30227 EN; Publications Office of the European Union: Luxembourg, 2020; ISBN 978-92-76-18982-4.

18 eGovernment Declaration. Available online: <https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration>. (accessed on 22 January 2021).

19 European Interoperability Framework—EIF. Available online: [https://ec.europa.eu/isa2/eif\\_en](https://ec.europa.eu/isa2/eif_en) (accessed on 20 January 2021).

20 Wilkinson, M.D. et al. The FAIR Guiding Principles for scientific data management and stewardship. *Sci. Data* 2016, 3, 160018

21 da Silva Avanzi, D.; Foggia, A.; dos Santos, V.A.; Deschamps, F.; Loures, E.D. A framework for interoperability assessment in crisis management. *J. Ind. Inf. Integr.* 2017, 5, 26–38.

22 Leal, G.D.; Guédria, W.; Panetto, H. Interoperability assessment: A systematic literature review. *Comput. Ind.* 2019, 106, 111–132

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of the DRM cycle, such as climate projections, risk assessment, weather forecasts, early warning, event monitoring (see Figure 1), which are developed and applied by distinct entities with diverse capabilities and targets, interoperability must be achieved in a flexible fashion. DIRECTED will demonstrate for selected models *how data and knowledge from other tools or additional (open) data sources, can be made interoperable* (see Table 1 below) and included into DRR and CCA workflows.

**Table 1: Enhanced tools for demonstration of interoperability in RWLs**

Tool or model	TRL	Innovations for interoperability	TRL
(a) SaferPLACES Digital Twin Solution for flood risk intelligence (GFZ, GECCO)	7	[Web platform][Python code] Developing compliancy (API, REST) with RWLs input flood hazard/damage data (forecast and real-time). Output compliancy with DATA-FABRIC and (b), (d), (e).	8
(b) RIMurban pluvial flood risk modelling and forecasting (GFZ)	6	[Numerical model] Added functionality for using additional input data sources, e.g. (c), and for merging model outputs (inundation maps) with data from other sources (remote sensing, VGI), and combining them with vulnerability models.	8
(c) Seamless Forecasting Tool (PIK)	6	[Web platform] The existing and implemented Future Danube Model is extended with seamless forecasting capability in a co-design mode with regional end users.	8
(d) CLIMADA (ETH)	6	(probabilistic risk assessment and adaptation option appraisal tool) [Python code] Adding functionality for multi-criteria inputs and analyses.	8
(e) Damage Cost and Adaptation Model – DCAM (DTU)	6	[QGIS tool] Added input compliancy with hazard data from (a), (b), and (c). Output compliancy with DATA-FABRIC. Alignment with damage cost functions used in CLIMADA.	8
(f) Connectivity Hub (SEI)	NA	Development of an open-source taxonomy enabling external platforms to share qualitative data (e.g. lessons learned) seamlessly with the Hub (and other platforms/models potentially), to enhance 'search and discovery', and to maximise connections between the content.	NA
(g) Oasis-CAIMAN app (OASIS)*	6	Add flood hazard warnings (c), information on how to prepare for a disaster and links to, e.g. (a) and DATA-FABRIC to ensure the wider exploitation of results.	8-9

\* The Oasis-CAIMAN citizen app enables the management and collection of disaster related loss and damage information from householders. It enables householders to record and share information with relevant agencies in the DRR process e.g. local authorities, responders and insurers thus reducing time spent to record losses in difficult times and enabling citizens to control their data.

### Governance [WP3]

**Rationale and state-of-the-art:** There is a growing need for coherence, alignment and integration across DRR and CCA enabling policy frameworks, driven globally by the Sendai Framework for DRR and the Paris Agreement, and at the EU level by the EU Civil Protection Mechanism, the EU Climate Adaptation Strategy, amongst many others. Cross-border, multi-stakeholder and cross-sectoral collaboration is crucial to disentangle the interdependencies and exploit the synergies across these policy frameworks, to influence the implementation of risk prevention and preparedness to response and recovery interventions, and stimulate continuous learning, innovation and research. In general, governance is increasingly shared by non-state actors. This also holds true

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for policies regarding DRR and risk governance: beyond the traditional category of states, subnational and regional actors, transnational coalitions, partnerships and alliances are active in governance related to disaster risk. Disaster-related governance takes place in multi-faceted forms ranging from international environmental agreements and national legislature to activities without strict legal character, such as climate strategies, action plans, non-binding programs, and mechanisms. These multiple forms of governance horizontally and vertically link state and non-state actors in a complex multi-level governance configuration.

Multi-level institutional configurations, esp. when encompassing the European policy, cannot be represented by one theoretical model or approach alone. Our objective is to analyse governance of disaster risks at different levels (European Union, national, sub-national and local) in the RWLs. Risk governance merges aspects of risk analysis and governance<sup>23</sup>. Risk governance denotes the application of governance principles to the identification, assessment, management and communication of risk<sup>24</sup>. Therefore, risk governance is about the institutional structures and socio-political processes that guide collective activities when dealing with risk issues. It includes the totality of actors, rules, conventions, processes and mechanisms concerned with how relevant risk information is collected, analysed and communicated, and how management decisions are taken. Risk governance builds on analyses of institutional settings, regulatory regimes, actor networks, and social perceptions of risks. Inclusive risk governance assumes that all stakeholders can make important contributions to the process of risk governance and that mutual communication and exchange of ideas, assessments and evaluations improve the final decisions rather than impeding the decision-making process or compromising the quality of scientific input and the legitimacy of legal requirements<sup>25,26</sup>. Evidence-based risk analysis provides relevant scientific facts needed for risk characterisation and risk management. Inclusion of stakeholder and civil society is expected to provide a normative yardstick for evaluating characterisations and management options available<sup>27</sup>. Governance of disaster risks consists of many dimensions, e.g. the rule structure, the distribution of resources, value orientations and cultural settings, as well as attitudes and beliefs. Our approach brings together ideas central to the study of DRR, CCA, risk governance, and stakeholder/public engagement. **WP3** aims to integrate current state-of-the-art governance approaches for improved knowledge integration by means of co-creative approaches towards user and stakeholder engagement and increased accountability. This involves merging the International Risk Governance Council's Risk Governance Framework with the TANDEM framework developed by SEI, the risk-layering approach put forth by IIASA, and scoping alignment with other governance frameworks for DRR and CCA planning and decision-making processes, such as the SHIELD model from the EPRESSO project<sup>28</sup>.

#### **Knowledge co-production [WP4]**

Implementing knowledge co-production processes is challenging because: **(i)** it is resource intensive due to its iterative, reflexive, non-linear nature<sup>29</sup>; **(ii)** it is transdisciplinary at its core, which involves a wide range of stakeholders across the science-society interface, representing a diversity of disciplines, sectors, skills and knowledge types<sup>30</sup>; **(iii)** it can surface or compound inequalities<sup>31</sup>; and, thus, it ideally requires actors with a particular set of skills to carry out the process, including facilitators or knowledge brokers<sup>32</sup>. While the TANDEM

23 Schweizer, P.-J. (2021) Systemic risks – concepts and challenges for risk governance, *Journal of Risk Research*, 24(1), 78-93

24 Aven, T., & Renn, O. (2019). Some foundational issues related to risk governance and different types of risks. *Journal of Risk Research*, 1–14

25 Renn, O., & Schweizer, P.-J. (2009). Inclusive risk governance: concepts and application to environmental policy making. *Environmental Policy and Governance*, 19(3), 174–185.

26 Renn, O., & Schweizer, P.-J. (2020). Inclusive governance for energy policy making: conceptual foundations, applications, and lessons learned. In O. Renn, F. Ulmer, & A. Deckert (Eds.), *The Role of Public Participation in Energy Transitions* (pp. 39–79). Elsevier Academic Press.

27 Schweizer, P.-J., Renn, O. (2019). Governance of Systemic Risks for Disaster Prevention and Mitigation. *Disaster Prevention and Management: An International Journal*, 28(6).


28 Baills, Audrey, et al. "The ESPRESSO Action Database: Collecting and assessing measures for disaster risk reduction and climate change adaptation." *International Journal of Disaster Risk Reduction* 48 (2020): 101599.

29 Polk, M. (2015). Transdisciplinary co-production: Designing and testing a transdisciplinary research framework for societal problem solving. *Futures*, 65, 110–22. DOI: 10.1016/j.futures.2014.11.001

30 Norström, A. V., Cvitanovic, C., Löf, M. F., West, S., Wyborn, C., et al. (2020). Principles for knowledge co-production in sustainability research. *Nature Sustainability*, 3(3), 182–90. DOI: 10.1038/s41893-019-0448-2

31 Turnhout, E., Metze, T., Wyborn, C., Klenk, N. and Louder, E. (2020). The politics of co-production: participation, power, and transformation. *Current Opinion in Environmental Sustainability*, 42, 15–21. DOI: 10.1016/j.cosust.2019.11.009

32 Cvitanovic, C., McDonald, J. and Hobday, A. J. (2016). From science to action: Principles for undertaking

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framework will be iteratively refined to incorporate governance aspects (**WP3**), the transdisciplinary knowledge co-production processes at its core will be applied to RWL in **WP4** to: **(i)** identify context-specific knowledge needs; **(ii)** enhance shared understandings of values, norms and perceptions of disaster risk; **(iii)** build confidence, awareness and capacity of information, data and models; and, **(iv)** strengthen institutional relationships and networks, to improve coordination, communication, feed into better information sharing and governance processes (**WP4**).

#### **DATA-FABRIC [WP5]**

DIRECTED will introduce a DATA-FABRIC Reference Architecture to address the large number of challenges typical of a “data fabric” framework: *(i)* very large data volumes; *(ii)* near real-time data delivery; *(iii)* large diversity of data-types and formats; *(iv)* diverse data ownership and permission constructs; *(v)* data security and protection; *(vi)* different data standards; *(vii)* multiple cloud providers and on-premise locations; *(viii)* flexible and agile data source and usage configuration; *(ix)* unified data catalogue for end-use discovery including lineage, active/passive metadata; *(x)* contextualisation and association of diverse data sources; and, *(xi)* automated and ML/AI-based data transformation and data pipeline workflows. The DATA-FABRIC will serve to address the different needs and associated challenges that comes with interoperability, e.g.: multiple organisations, across multiple national boundaries and working with diverse technology; and diverse organisations with differing operational requirements (research, local/ regional authorities, practitioners, commercial/ private sector) and perspectives across the full DRM cycle (social, economic, response, resilience building). In addition to existing “data fabrics”<sup>33 34</sup> as usually found in more homogeneous environments, our innovative approach will draw upon current and emerging “Data Mesh”<sup>35 36</sup> and “Data Virtualisation”<sup>37 38</sup> frameworks. Hence, it was recently recognised that the evolving data organisation and management architectures and components are not mutually exclusive, but instead complement each other, particularly in highly complex and demanding environments such as that envisaged for DIRECTED. The consortium partner 52N will apply its deep experience and knowledge of Data Engineering and Architecture to co-develop an architecture that addresses the manifold requirements for communication and interoperability in collaboration with stakeholders within and beyond DIRECTED. The DATA-FABRIC will support end-to-end DRR and CCA processes, providing context-relevant views across a wide variety of information consumers and actors. These shared views will encompass not only data used as input for modelling and other analytic decision-making processes, but also insights that emerge from those analytic processes. The proposed data fabric will include tools to provide meaning and context to different forms of data such as structured, unstructured, time-series, relational, wide column, graph and qualitative data. Data pipelines will be automated through workflows and integration orchestration. Orchestrated data pipelines can, for example, be configured to be triggered or conditionally altered at runtime, based on human input and/or the outcome of numeric modelling.

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environmental research that enables knowledge exchange and evidence-based decision-making. *Journal of Environmental Management*, 183. 864–74. DOI: 10.1016/j.jenvman.2016.09.038

33 Alice LaPlante. *Data Fabric as Modern Data Architecture*. O'Reilly Media, Inc. June 2021

34 Claudia Imhoff, Ph.D. *Creating a Successful Data Fabric for Your Enterprise, Understanding the Data Fabric Processes and Technologies*. Intelligent Solutions, Inc. May 2021

35 Pietheine Strengtholt. *Data Mesh topologies - Design considerations for building a data mesh architecture*. July 28 2021. <https://towardsdatascience.com/data-mesh-topologies-85f4cad14bf2>

36 Zhamak Dehghani, *Data Mesh Principles and Logical Architecture*. Thoughtworks December 2020. <https://martinfowler.com/articles/data-mesh-principles.html>

37 Ehtisham Zaidi, Mark Beyer, Ankush Jain, Sharat Menon. *Market Guide for Data Virtualization*. Gartner November 2018.

38 Rick F. van der Lans. *Overcoming Cloud Data Silos with Data Virtualization*. R20 Consultancy May 2020.

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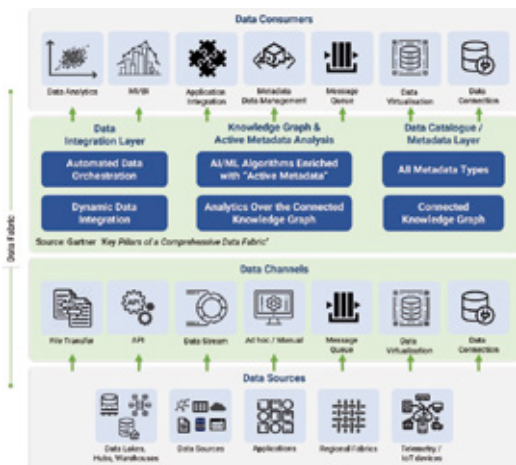


Figure 4: “Data Fabric” Architectural Framework for managing any data – any source, diverse use cases, intelligently identifying, tagging, governing & associating data in near real-time.

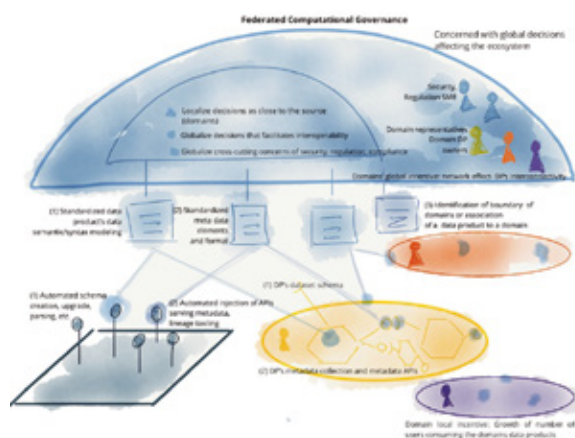


Figure 5: “Data Mesh” Architectural Framework for Data Governance and Interoperability<sup>39</sup>.

1.2.5 International research and innovations feeding into DIRECTED

DIRECTED is related to, will deploy and/or enhance a number of research outcomes and innovations derived from pivotal European research projects, leading initiatives and thought leading networks (Table 2). In most of these, one or more of the consortium partners were/are involved, placing our consortium in a unique position for building upon and adding value to cutting-edge research and innovations across different domains and to go beyond the state-of-the-art. These relationships will also support stakeholders in swiftly adopting the outcomes from DIRECTED and expanding the total outreach along our pathways to impact. Our consortium maintains strong ties to the Global Risk Assessment Framework (GRAF) expert group of the UNDRR, the International Federation of the Red Cross Red Crescent (IFRC), the European Emergency Response Coordination Centre (ERCC), and the Joint Research Centre (JRC) and related projects such as PESETA. Several organisations have expressed their support for and commitment to work within the DIRECTED RWLs by signed letters of endorsement: International Risk Governance Centre (IRGC), National Association of Radio Distress-Signalling and Infocommunications (RSOE), Oasis Loss Modelling Framework (OASISlmf), Federal Ministry of Agriculture, Regions and Tourism (Austria), University of Public Service, Faculties of Water Science and Law Enforcement, Institute for Disaster Management, Civil Protection Organisations of Ferrara, Riviera del Conca (Italy), as well as province and community authorities, namely Emilia-Romagna, Ferrara, Comacchio, and Parco del Delta del Po (Italy).

Table 2. Non-exhaustive list of related activities and networks, which are related to DIRECTED (\* denotes projects where a partner was/is involved)

Projects / networks	Contributions to DIRECTED
<b>*SaferPLACES</b> (EIT Climate KIC)	Innovative climate service for mapping flood risk and cost benefit analysis of adaptation options in. We will build on and further develop the Digital Twin cloud web platform for flood risk intelligence ( <a href="http://www.platform.saferplaces.co">www.platform.saferplaces.co</a> ).
<b>*OASIS HUB</b> (Formed with support from EIT Climate-KIC and H2020 Insurance)	Global Window to Free and Commercial Environmental and Risk Data, Tools and Services. All the data, tools and services, both public and commercial, are available to be linked to the DATA-FABRIC if needed. The Oasis Hub has a global community of 2500 members from a range of sectors and a large social media network who are users of climate change and risk information that will be used to communicate DIRECTED information and updates
<b>H2020 I-react</b>	Improving Resilience to Emergencies through Advanced Cyber Technologies. This project has provided cutting edge AI and big data based technology for emergency response and disaster management. The enhancement of impact forecasting and event monitoring apps, e.g. Oasis-CAIMAN will build on these developments and

39 Source: Zhamak Dehghani, *Data Mesh Principles and Logical Architecture*. (ThoughtWorks, December 2020)

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Projects / networks	Contributions to DIRECTED
	innovations.
<b>H2020 beAWARE</b>	Decision support and management services for extreme weather climate events. Improving the management of extreme weather-related emergencies from forecasting and prevention to early warning and response coordination.
<b>H2020 ANYWHERE -</b>	EnhANCing emergencY management and response to extreme WeatHER and climate Events. The ANYWHERE Pan-European multi-hazard platform for improving the prediction and prevention of weather-induced impacts will be analysed during the stocktaking of interoperability, i.e. through the lens of interoperability standards and technical feasibility to integrate with other data, models and tools.
<b>*H2020 PLACARD</b>	Strengthening Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) communities. The Connectivity Hub offers visualisation of climate change adaptation and DRR landscape, lessons learned
<b>*H2020 ETN SYSTEM-RISK.</b>	A large-scale systems approach to flood risk assessment and management. A systems approach to the assessment and management of hydrological extremes, expanding on methods and tools for risk modelling, assessment and multi-level integration of actors.
<b>*RECIPES</b>	REconciling sCience, Innovation and Precaution through the Engagement of Stakeholders. DIRECTED will build on the participatory development of guidelines and tools for precautionary decision-making and socially responsible innovations.
<b>RISKKAN</b> Knowledge Action Network on Emergent Risks and Extreme Events	The network provides an open platform for different scientific communities working on extreme events, disaster risk reduction and governance to exchange information, knowledge and data. We will cooperate with the network and disseminate our findings and developments to the community. Vice versa, we will take-up key insights from ongoing research and innovation activities.
<b>*International Risk Governance Centre</b>	The IRGC Risk Governance Framework serves as the conceptual point of departure for <b>WP3</b> .
<b>H2020 MYRIAD</b>	Multi-hazard and sYstemic framework for enhancing Risk-Informed mAnagement and Decision-making in the E.U. We will team up with MYRIAD for mutual exchange regarding multi-hazard, multi-sector, systemic risk management, integrating the envisaged web-based dashboard as a highly topical information resource and hub for relevant data and services. RWL synergies will be fathomed (e.g. Danube).
<b>*EPREssO</b> Enhancing Synergies for Disaster Prevention in the European Union	The SHIELD model illustrates interlinkages and interdependencies between management and governance in DRR and CCA, generating recommendations around knowledge sharing, harmonizing capacities, institutionalizing coordination, engaging stakeholders, leveraging political commitment and developing communication. The SHIELD model will be used to inform the development of an integrated governance framework in <b>WP3</b> (Task 3).
<b>H2020 DAREnet - Danube River Region Resilience Exchange network</b>	DAREnet is a network of national practitioner networks, dealing with flood resilience in the Danube River Region. These partners and the associated information are highly relevant for the RWL Danube.
<b>*H2020 Insurance - Oasis Innovation Hub for Catastrophe and Climate Extremes Risk Assessment</b>	With the insurance and public sectors as main end users, methods and standards for climate risk assessment were developed and published. DIRECTED will maintain contacts with global insurers and reinsurers through insurance partnership members - e.g. Oasis LMF, Swiss Re, Generali and others with whom we will discuss potential access to DIRECTED systems. We also build on the multi-hazard multi risk model developed for the Danube region (Future Danube Model) for modelling and assessing future climate risks and hazard forecasting within the RWL Danube region.
<b>*H2020 TransFormAr</b> <b>*H2020 ARSINOE</b>	Both Green Deal projects aims to develop and demonstrate pathways, products and services to launch and accelerate large-scale and disruptive adaptive processes for transformational adaptation in vulnerable regions and communities across Europe.

In addition, DIRECTED will actively pursue synergies with relevant projects to be funded under Horizon Europe Clusters 3 (Disaster Resilient Societies) and 5 (Climate, Energy and Mobility), including those funded under HORIZON-CL3-2021-DRS-01-01 and HORIZON-CL3-2021-DRS-01-03. In the case of the DATA-FABRIC

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(**WP5**) we will review previous work, similar initiatives and interoperability tools used in order to leverage best practice and align our efforts with the current state-of-the-art. This includes for example, the Sendai Framework, FP7<sup>40</sup>, H2020<sup>41</sup>, priorities of the Green Deal and the IFAFRI<sup>42</sup> Capability Gaps. Alignment of value with other current initiatives will also be investigated such as the work of the GRII<sup>43</sup>.

#### 1.2.6 Integration of social sciences and humanities

DIRECTED blends conceptual and empirical contributions, underpinned by a comprehensive portfolio of knowledge-exchange strategies that ensures that our findings are shared widely with key stakeholders and can help to secure tangible improvements in risk governance related to DRR and CCA in the RWLs and beyond. Our team has existing strong links with and excellent access to senior policymakers, first responders, users and other stakeholders that will both facilitate the empirical research in the RWLs and enable us to communicate the results. Our research will adopt an interdisciplinary approach. We draw on and combine perspectives from the natural sciences and engineering as well as the social sciences and humanities. First, this interdisciplinary cooperation and integration of knowledge across scientific disciplines contributes towards a more comprehensive framework for generating significant new findings which will, in turn, advance science and practice for DRR and CCA, and contribute to policy. Second, the challenges of multi-risk, multi-hazard DRR and CCA cannot be addressed by technological solutions alone. Societal contexts matter for implementing effective and acceptable DRR and CCA. Therefore, DIRECTED bridges the gap between social science research on risk governance, knowledge integration, co-production and dissemination as well as the natural science research aiming for an integrated interoperable framework merging quantitative and qualitative indicators. Our expertise in social science disciplines such as sociology and political science contributes towards mapping societal structures and governance arrangements but also scoping and analysing societal needs (**WP 3, WP 4**). The integration of social science expertise safeguards the project's adaptability and responsiveness to societal requirements and enhances the societal impact of the research and innovations of the project.

#### 1.2.7 Gender dimension

The DIRECTED consortium is aware and committed to adhering to the European Gender Equality Strategy 2020-2025. It will aim to go beyond ensuring gender balance across the project structures (e.g. General Assembly / Steering Committee – **WP7**), maintaining inclusive participation at any stakeholder engagement events (Joint Workshops – **WP1, WP3**), co-designed processes (**WP2, WP4**), user guidance (**WP5**) and in planned communications, dissemination and exploitation activities (**WP6**). As such, it will aim to promote gender equality and inclusiveness throughout its research and innovation and across all seven work packages to ensure diversity. In addition, the consortium will highlight where gender considerations can add value to the research outputs and therefore ensure increased impact from DIRECTED. The consortium is committed to the key elements of Responsible Research and Innovation (RRI) including gender and will build on the experiences of completed European funded RRI projects (for example, the RRING project, co-ordinated by Partner 8). DIRECTED also recognises that climate change has a disproportionately higher impact on women and as such will strive to integrate gender dimensions in its work programme by adopting a mainstreaming approach.

We are aware of major differences in the vulnerability, impacts and experiences of disasters, in particular the impacts on women, the elderly and children due to cultural, caring duties, resource constraints and inequality. Also, in Europe 70% of those killed in disasters are men due to being more involved in rescue efforts. We will ensure in the RWLs that full consideration and linked improvements will try to reduce the vulnerability to disasters of these groups.

40 EC. 'Seventh Framework Programme 2007-2013'.

41 EC. 'Horizon 2020 Framework Programme'. <https://ec.europa.eu/programmes/horizon2020/en>

42 International Forum to Advance First Responder Innovation. 2020. 'Capability Gaps'.

<https://www.internationalresponderforum.org/capability-gaps-overview>

43 IDF. 'Global Resilience Index Initiative'. Launched at CoP26 Glasgow. [www.globalresilienceindex.org](http://www.globalresilienceindex.org)



### 1.2.8 Implementation of open science

DIRECTED is dedicated to Open Science, in line with the EU recommendations on Open Access, Open Source and Open Data. Additionally, **WP6** will reach out and make DIRECTED's science available to policy makers and EU, national, regional, and local stakeholders. As a central piece, all RWLs (**WP1**) will actively include civil society in the knowledge creation process of DIRECTED. Some of the data, computer code and otherwise gathered and produced information within DIRECTED will only be partially suitable for open science due to privacy rights, states actors' rules, or commercial interests. Consequently, as a first task in **WP7** an Intellectual Property Rights (IPR) agreement is agreed by all partners in order to minimize any limitations from financial, technical and legal obstacles towards the implementation of the project. Licensing agreements for the use of propriety models beyond the duration of the project are negotiated with the relevant partners.

**Open communication.** It is a core goal of this project to share knowledge and data as early as possible in the research and innovation process with all relevant actors to diffuse the latest knowledge. **WP6** will be tasked explicitly with fostering knowledge transfer; **WP4** ensures knowledge co-production between actors; in **WP1** knowledge is disseminated to and from end-actors directly in RWLs; **WP2** aims to make selected numerical models interoperable, i.e. able to share and incorporate information; **WP5** will provide the means, i.e. a data fabric, for efficient sharing of diverse data types and formats between multiple organisations, across national boundaries and working with diverse technology to produce diverse outcomes, for associated analytic and governance purposes.

**Open Access.** Open Access to peer reviewed scientific publications and project reports will be incorporated as a natural part of disseminating outcomes for the benefit of society. For all peer-reviewed scientific publications related to the results of DIRECTED project research, open access (free of charge online access for any user) will be ensured, primarily published in Open Access journals (Gold Open Access). For reports and articles in non-open access journals, preprints of articles will be made available through commonly used repositories (Green Open Access i.e., through CC-BY or equivalent licenses). The metadata of all publications will be openly available and machine readable in line with the FAIR (*findable, accessible, interoperable, reusable*) principles. Authors will ensure that published articles include all necessary information to validate their conclusions and reproduce the respective research data.

**Open Source.** Open sourcing tools and providing open access to knowledge increases the efficacy of science through an improved supply of information and increases innovation based on scientific knowledge by facilitating the transfer of knowledge to society, the economy, and politics. Thus, models, and configurations of governance-workflows and data-transformation workflows, developed during this project will be available open-source to guarantee sustained use after the end of the project.

**Open data.** TUBS will lead the data management and is responsible for the development of a Data Management Plan (DMP) (**WP7**). **All datasets produced by the DIRECTED consortium will be made available openly.** FAIR principles will apply for all datasets with exact rules defined in the DMP and the IPR agreement. Data of scientific publications will be made accessible openly through e.g. Digital Library Institutional Repository of TU Braunschweig, GFZ data services, EUDAT's B2SHARE, OASIS HUB, ZENODO or similar platforms that ensure FAIR principles, and through the data-fabric as part of **WP5**. Additionally, DIRECTED data will be findable through referencing with persistent identifiers, e.g., Digital Object Identifiers (DOIs), and rich, standardized metadata; interoperable through the use of data formats, metadata and conventions defined in **WP2** (Task 2).

### 1.2.9 Data management

The DMP will be based on the [EC's template](#) and describe the data management life cycle for the project data to be collected, processed or generated, and the measures to curate, store, protect and give access to them. Annual reviews of the DMP will reflect the project progress and developments (**WP7**).

## 2. Impact

### 2.1 Project's pathways towards impact

#### 2.1.1 Unique contribution

The DIRECTED Project more broadly seeks to improve the practical management and efficiency of managing disaster risk, disaster risk reduction and climate change adaptation. Reviews of common practice provide a range of institutional and practical issues that reduce the efficiency of current DRR and CCA systems. These include:

- Decision-making processes relevant to disaster risk management and CCA
- Institutional barriers to improved DRR and CCA management e.g. working over large areas with multiple municipalities and associated management structures
- Issues between national & local government roles
- Lack of formal links between the scientific community and local actors & the general public, as well as scientific knowledge transferred in an understandable way
- Separate organisations and departments dealing with DRR & CCA

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- The need to counteract increasing impacts from extreme weather events driven by climate change and socio-economic development (needed adaptation efforts which must leverage synergies with DRM)
- The recent availability of multiple data and analytical tools (some developed as a result of EC funding) that could be used to assist risk assessment, planning and decision-making but are limited in scope (e.g. focus on one hazard), unable to provide more comprehensive risk assessment in a multi-risk context and spanning over a range of providers both in the public and private sector – a more interoperable and comprehensive systems approach to management of risk assessment and adaptation planning is required
- The ability to create actionable intelligence based on data and information from multiple sources
- The need to improve capabilities to prepare for and respond to unprecedented and compounding extreme weather events
- The need to break up silos: fragmented policy domains, sectors to enable interaction and exchange among actors
- The need for improved communication systems between agencies and stakeholders

Therefore, to tackle the above, the development of more appropriate governance frameworks that improve joint working, provide replicable workflow processes and enable management of complexity are needed to improve current working practices. Likewise, the interoperability and integration of multiple analytical tools needs to be developed to increase access and efficiency to multiple forms of hazard data and tools in risk assessment. Developing a data ecosystem that enables communication of relevant information to multiple partners and enables the access to multiple forms of data and results is critical to increasing a joined up and rapid approach to DRR/CCA management.

#### 2.1.2 Outcomes, indicators of scale and significance

**Outcome 1** *Improved dialogue and cooperation among scientific and technical communities, stakeholders, policy-makers and local communities in the field of extreme climate events and associated events (e.g. forest fires, droughts, floods, heatwaves and storms) and disaster risk reduction.*

**Output 1:** Using the RISK-TANDEM Assessment Technique we will increase the interactions, co-exploration, co-production with transdisciplinary stakeholders in the DRR/CCA sectors (including first & second responders, planners, scientists, media, utilities, social services & NGO's) - through the creation of four real world labs – assisting the development of long-term working relationships; understanding roles, responsibilities, dependencies, barriers to improvements and efficiencies needed. **Indicator 1:** Real world lab case studies and summary reports used by DRR/CCA stakeholders for planning purposes

**Scale of contribution** – The RISK-TANDEM Assessment Technique will enable the building of consensus approaches towards disaster risk management, reduction and climate adaptation for the four regions of the real world labs: the Danube River Basin, covering the multiple municipalities – in city and countryside contexts, Copenhagen and Capital Region, Emilia Romagna region, Italy, and the Rhine-Erft Region, Germany

**Outcome 2** *Enhanced community engagement for prevention, preparedness, response, recovery and learning to extreme climate events by strengthening knowledge and involvement of volunteers linked to recognised organisations into the planning, design and implementation of prevention, including building with nature, preparedness and emergency response activities.*

**Output 2:** A Co-production methodology for disaster resilience will be developed and used by at least two municipalities increasing the connections and engagement of volunteers in the planning, design and implementation of prevention, including building with nature, preparedness and emergency response activities. **Indicator 2:** Co-produced planning reports

**Scale of contribution** – Disaster Resilience Planning Reports will be developed and included in local planning in Copenhagen and Capital Region, Emilia Romagna region, Italy and the Rhine-Erft Region, Germany

**Outcome 3** *Strengthening of disaster risk reduction and resilience building through innovative use of media means, namely by examining the potential of new communication tools and apps for better preparedness and response.*

**Output 3a:** A data fabric/ mesh/ ecosystem – and linked tools, developed into workflows, that enable the rapid delivery of relevant information, data, maps etc. to relevant stakeholders e.g. maps of potential areas at risk using forecast information for risk assessment to early responders or communications for mass media delivered with warning visualisations or integration of data sources for climate change adaptation

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etc. **Indicator 3a:** workflows will be utilised by real world lab participant stakeholders to improve current processes

**Output 3b:** Visualisations – Simple communications in the form of visualisations of threat level, action required and how to get communications on hazard events will be developed for the general public consumption – enabling faster actions of citizens to prepare for climate events – for 3 municipalities.

**Indicator 3b:** Visualisations disseminated to general public online, social media &/or via printed mailings

**Scale of contribution** – The data fabric/ mesh/ ecosystem will provide a prototype system and tools enabling replicable workflows of work including multiple stakeholder organisations, all types of quantitative and qualitative: including data, maps, visualisations and text formats for communications to diverse stakeholders. The system is intended to radically reform and improve the management and communications for disaster management, risk assessment and adaptation planning enabling actionable decisions using complex and multiple data sources. We intend for this tools to be replicated across Europe and beyond.

**Outcome 4** *Overview of existing knowledge, tools and development of new tools (innovative data collection, satellite data, data harmonisation, artificial-intelligence tools, algorithms, sensors and decision-aid approaches) for early warning, response and resilience / adaptation to be demonstrated in the framework of real-case scenarios designed for training addressed to first and second responders, (national, regional, local) authorities and populations. The overview should document how legal and ethical rules of operation as well as fundamental rights such as privacy and protection of personal data are taken into account.*

**Output 4:** Forecasting and risk assessment, and adaptation tools made interoperable to increase functionality and multi-risk outputs necessary for seamless early warning, risk assessment and risk reduction strategy decision-making. The tool collaboration will have the capability to be used for training and implementation of disaster risk management. **Indicator 4:** Use of interoperable systems by DRR and CCA authorities to assist training, planning and decision making

**Scale of contribution** – From within the Project a range of existing tools in flood risk assessment, adaptation planning, forecasting, citizen App will be enabled to become interoperable – thus improving multi-hazard risk assessment capabilities and functions – on top of this the work on interoperability is set to develop a standard so that multiple tools and data from beyond the project can also become interoperable in the future and in doing so improve access to and functionality of single use tools into a multi-hazard ecosystem for decision support for multiple stakeholders across sectors and European regions and beyond.

**Outcome 5** *Based on the demonstrations, development of new governance strategies and robust decision-support methodologies for integrated risk reduction and improved adaptation to climate extreme events.*

**Output 5:** Data fabric/ mesh that enables the sharing, management and communication to relevant stakeholders in useable formats of complex information, data, maps and risk assessment – managed through one multi-partner system. **Indicator 5:** – Governance workflows agreed by stakeholders and implemented into management system/ data fabric

**Scale of contribution** – Governance workflows on a range of case studies will be implemented in the Danube River Basin, covering the multiple municipalities – in city and countryside contexts, Emilia Romagna region, Italy, Copenhagen and Capital Region, and the Rhine-Erft Region, Germany

**Outcome 6** *Improved understanding of enablers and barriers to multi-risk governance frameworks and multi-risk thinking, by involving interdisciplinary teams in different fields, particularly the social and behavioural sciences.*

**Output 6:** Policy brief on risk governance in the context of DRR and CCA highlighting barriers and potential solutions to improve multi-risk governance. **Indicator 6:** Uptake of recommendations from policy brief by at least one DRR/CCA agency

**Scale of contribution** – The EC and national policy-makers in Germany, Hungary and Italy will have access to findings and results of the DIRECTED Project. We envisage this will assist future governance of disasters and climate adaptation planning.

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**Outcome 7** *Cost-benefit or cost-effectiveness analyses of investment and regulatory strategies to protect people and nature in vulnerable areas.*

**Output 7:** Cost-benefit analysis of climate adaptation/ disaster reduction measures made for at least 2 municipalities during the project. **Indicator 7:** Cost-benefit analysis of climate adaptation/ disaster reduction measures for at least 2 municipality used in future planning document or applications for adaptation funding for climate adaptation/ disaster risk reduction

**Scale of contribution** – Two municipalities will have conducted cost/ benefit analysis of potential climate adaptation actions enabling a strong needs analysis of multiple climate adaptation solutions that increases the potential for investment

#### 2.1.3 Target groups

DRR and CCA communities involve multiple stakeholder groups, all requiring information for different purposes and at different levels of communication. Likewise, the work undertaken involves different time dimensional needs e.g. disaster information during a disaster and the need for risk reduction and climate adaptation planning. We seek to reduce complexity and increase efficiency to access the relevant information and data needs through understanding and creating appropriate workflows where we will seek to link appropriate climate science outputs and information to make operational decisions at the appropriate time, e.g. risk reduction and adaptation planning or for training and preparation or operational response. We have carefully selected representational organisations of our target groups to be directly involved as co-production, co-design partners in the Project. Our target groups include: 1) first and second responders, 2) Regional and municipal civil authorities - including disaster management, planning authorities and cross regional municipalities, 3) Physical and social scientific organisations - those who work in climate change, natural disaster sciences and damage and loss, governance and innovation, and 4) The general public - will be represented by municipalities

The Real World Labs will invite other local stakeholders including utility companies, NGO's, health and social care organisations to become part of the consultations. We perceive that the four RWL's in the Danube catchment basin, Germany, Italy and Scandinavia will be representative of stakeholders from across Europe to ensure the potential for scalability of governance structures, the use of interoperable tools and management via data fabric/ mech digital architectures.


#### 2.1.4 Outcomes and impacts of the DIRECTED project

**Scientific:** the DIRECTED Project will assist the scientific community in stocktaking of standards for the interoperability of data and models, identifying gaps and requirements to exchange information between different phases of DRM/ CCA cycle and across hazards and integrating quantitative and qualitative indicators. This will assist the scientific community with providing an interoperability framework that enables future tool development that can become part of a wider network for decision making data, tools and systems increasing the potential to provide actionable intelligence based on data and information from multiple sources by the DRR and CCA community.

Through the production of workflow processes within the Project – the provision at what stages, to whom and in what format scientific information is included and communicated will be an impact of the Project providing collaboration between sectors that do not traditionally have access to science and scientists directly, likely to become a policy recommendation moving forward, thus increasing access to actionable science by all levels of government and society.

**Economic:** the DIRECTED Project outputs will contribute a range of economic impacts in the future:

- The breakdown of silos e.g. between cross boundary municipalities, between multiple stakeholder groups in the DRR/CCA process will increase the economic efficiency of work and linked funding by creating more seamless workflows, preventing duplication of spend on the same actions with the potential to more carefully budget and target spend across actors and locations.
- Work that has enabled the interoperability of multiple forms of data and tools into producing multi-risk, risk assessment and climate change adaptation solutions plus linked cost benefit analysis will increase the potential to implement adaptation actions, targeted at locations most at risk, thus reducing the overall spend required to enable increased resilience by society.
- Losses from climate disasters are reduced through enhanced disaster risk reduction based on preventive actions, better societal preparedness and resilience and improved disaster risk management in a systemic way – with the

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potential to reduce losses significantly over time in the regions of billions of Euros

**Societal:** The DIRECTED Project outputs will also contribute to societal impacts in the future:

- Losses from climate disasters are reduced through enhanced disaster risk reduction based on preventive actions, better societal preparedness and resilience and improved disaster risk management in a systemic way.
- Enabling scientific outputs to more rapidly be utilised by DRR/CCA actors and also directly communicated to the general public – helping to inform potential for damage and then actions required across society including at household & business levels to reduce the impact of climate-related catastrophes.
- Supporting first, second and third responders with forecast and risk assessment information they need to utilise emergency services more effectively – understanding the likelihood of the most impacted zones after a disaster and conditions associated with that emergency e.g. flood levels, types of properties and multiple other data sources as brought together by interoperable tools and the data fabric/ mesh
- Supporting first, second and third responders with training materials enabling more efficient responses to climate emergencies

2.1.5 Requirements and potential barriers arising from factors beyond the scope and duration of the project

Barriers beyond the scope of the Project include:

Barrier	Mitigation
Willingness of neighbouring municipalities some with differing political allegiances to collaborate together on improving DRR/CCA actions – this is both an immediate risk, as well as a longer terms risk as political administrations change over time	Longer term EC DRR/ CCA strategies EU Adaptation Strategy/ EU Green Deal – encouraging longer term cross party strategic approaches
Willingness to consider better budget allocation between agencies and national and local government	Greater cross silo working
Budgets provided to encourage climate adaptation and disaster reduction	National investment in increased climate adaptation and disaster risk reduction

The DIRECTED Project will improve disaster risk management and CCA process, data and analytical tool output management across the range of actors in the DRR and CCA workflows - increasing our understanding of context-specific disaster risk management and CCA decision-making processes, making the processes replicable, improving data outputs, and improving communication to relevant stakeholders whilst increasing the accountability of stakeholders in these processes.

Results that will need communication and dissemination will take the form of:

- Agreed case studies resulting from discussions in the real world labs, but protecting any confidential information gained from these discussions
- New work on making data, tools and services in the form of forecast, risk assessment, risk management and climate adaptation more interoperable and appropriate to wider DRR and CCA management planning systems
- New decision-making and management processes for governance connected to DRR and CCA
- Information on the types of analytical tools being improved in the project
- How both established and emerging data architectural frameworks such as data fabrics and a data mesh can be used effectively to increase data visibility, workflow effectiveness and efficiency - as well as ensure communications of relevant data to relevant partners in the DRR/ CCA process and increase accountability of stakeholders
- Training programmes and webinars

The communication and dissemination aspects of the Project will require important consideration due to the seriousness and nature of the content, ensuring communication accurately reflects the science and its implications. Therefore, DIRECTED will create a communications hub that will target a large range of stakeholders through the following three vehicles.

## 2.2 DIRECTED Research and Innovation Communications Hub

Oasis Hub will lead on the formal communications of the Project in conjunction with all partners in the DIRECTED Project. Formal and social media communications will be centralised through the Oasis Hub with dissemination of news, articles, blogs, social media messaging through Oasis Hub networks and the partner organisations in the Project. Oasis Hub has experienced science communication and innovation professionals thus DIRECTED will communicate professional level materials aimed at non-specialist audiences through a diary of planned releases related to the different stages of the project. Releases will be translated into a range of European languages linked to relevant target audiences. The phases are broadly outlined below, however if out of sequence communications opportunities are identified these will be pursued:

### Stages of DIRECTED communications

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
<p>Communications strategy developed</p> <p>Project launch communications</p> <p>Start of Project Blog – quarterly blog posts to continue to end of the Project</p> <p>Bi-weekly social media posts began and continued to the end of the Project e.g. stories, plans etc.</p> <p>Website development</p>	<p>Communications on Project events, workshops, processes, techniques and the physical and social scientists/ themselves - building a picture of the people, stakeholder involvement and outcomes during this phase</p> <p>Continued social media dissemination</p>	<p>Communications on early scientific &amp; governance and process findings from market research and stakeholder needs assessment and workshops – in particular from real world labs</p> <p>Beginning of conference dissemination</p> <p>Continued social media dissemination</p> <p>Case study creation</p>	<p>Research publications and related news and articles</p> <p>Training material and programme on use of tools and systems</p> <p>Webinar series with physical and social scientists</p> <p>Continued social media dissemination</p> <p>Media pack creation &amp; dissemination (press releases for international media)</p>	<p>Policy-maker meetings, policy briefs.</p> <p>Conference dissemination of results</p> <p>Continued social media dissemination</p>

### General communication techniques

**A project specific website** will be created to ensure increased visibility of the Project website

**Social media networks and targeting** – Oasis Hub will use its social media communities on twitter, LinkedIn, YouTube (where video is available) to communicate messaging. Existing audiences on Oasis Hub twitter (mixed community of specialists in: insurance/ reinsurance, scientists, economists, climate change specialists (including policy), risk management & reduction, disaster risk reduction, remote sensing, flood risk, climate adaptation, sustainable development, natural hazards, climate risk, climate change adaptation, big data in both public and private sectors) and LinkedIn (mainly insurance, reinsurance and finance specialists), partner, other beneficiary communications teams will be requested to retweet to their audiences (mainly academia and municipalities) – we will also seek support from EC communication hubs such as Climate Adapt, weADAPT and through other departments and platforms of the EC.

**New audiences** will be targeted through linking to particular influencers in relevant sectors – new target sectors will include risk managers in municipalities, local authorities and services, policy-makers, DRR professionals and local planning departments and specific targets as they become clear after the ideation/ market research/ user needs engagement in the Project.

**Blogs** will be used as a medium to fully engage audiences in a more detailed fashion. Blogs will be posted at a minimum on a quarterly basis, at the beginning of the Project but will increase as activity and outputs increase in the Project

**Webinar series** will be designed for specific sectors phase 4 of the project communications with the physical and social scientists, and local governance actors engaged in the project, presenting and talking to specifically targeted sectors and then further engagement by Oasis Hub of attendees in encouraging the use of outputs by those stakeholders engaged in the webinars. Oasis Hub webinars attract in the region of 200 people per webinar. The recordings of the webinars will be shared on YouTube.

**Conference attendance** – partners will attend and develop sessions for academic, public sector and business conferences to promote the new methodologies, data, tools/ tool-kits/ training packs and reports etc. These conferences will include EGU, COP, ICLEI, Disaster Risk, ECCA, DRR and CCA conferences – to target specific audiences where relevant. Where possible stands will be located at larger conferences promoting the full outputs of the Project.

**Visualisations for the general public** will be designed for effective communications of stages of risk decision for public information to enable a simple understanding on the processes of risk e.g. prepare, evacuate, where to find official communication, level of flood that sparks decision stages – these will be designed in local languages and for the local context for the RWL's

**Media Packs** – will be designed for digital distribution to specialist on-line media portals e.g. insurance magazines, FinExtra finance and tech, EU Adapt and other EU comms platforms, and medias targeted at Cities and public

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authorities and the international media. These packs will contain case studies and press releases related to specific outputs of the DIRECTED Project. A major media campaign will occur in the 4th phase of the communications plan when results are ready to be published.

**Academic journals** – academic partners will target online high impact journals with academic research and new methodologies produced by the Project

**Policy briefs** – will be created using the results of the DIRECTED Project to make recommendations towards EU disaster risk, economic and climate adaptation policies. A briefing of the results of the Project will be conducted in phase 5 of the Project to relevant EU DG's – we will also seek an understanding whether relevant DG's would seek to be kept up-to-date in the progress of the project e.g. how & when.

### **Exploitation/ Innovation will take place in three phases.**

#### **Phase 1 – User needs analysis**

The project will explore the underlying needs of five key sectors for access to the forecast, risk assessment and climate adaptation information and use of a synthesising data fabric/ mesh - communication needs:

- Community/ Municipality Risk and General EU public (Cities & municipalities & local communities & umbrella NGOs) (developed by RegionH, ARPC-ER, ARPAE)
- First, second and third responders (developed by ZSRT, ARPC-ER)
- Media (Oasis Hub)
- Risk Transfer (Insurance/ Reinsurance) - (developed by Genillard & Co)
- Policy-makers/ Government – (Genillard & Co)

Stakeholder needs assessment will be conducted through B2B, Online surveys and local/ online workshops/ the Real World Labs and will include:

- Identify changing patterns and needs of sectoral work caused by the needs increased climate extremes and the need to combine risk management, reduction and adaptation
- Access to information – identifying issues and gaps in access to data and information
- Multi-risk data, analytical tools and information needed by the sectors to address needs (actionable intelligence)
- Necessary connections to improve DRR/ CCA management
- Workflow analysis and development

Phase 1 will be completed by month 24 of the Project to be fed back into the Work Packages for consideration and tool & data ecosystem and adjustments

#### **Phase 2 Business model planning**

Market sizing has been produced by IFAFRI Gap 9 report which states “*The Global Big Data Analytics Market was estimated to be worth more than \$8.5 billion USD in 2017 and is projected to grow at a Compound Annual Growth Rate (CAGR) of 29.8% through 2023. This equates to a market value of more than \$40 billion USD in 2023.*” In terms of the Market we will need to reflect on the longer term

sustainability and scaling of the tools and systems and how to gain increased uptake. The current market spans a myriad of data, tools and services providers, from multi-national IT systems providers, to SME's around single hazard or task tools and many new innovations e.g. those developed from the EC H2020 that have not reached maturity so could be risky to invest in fully until they are proven in the market.

The DRR/CCA context spans over both the public and private sector so understanding from potential funders e.g. EC, central or local government or through commercial sector scaling, needs to be examined. For example, the government sector may or may not wish to fund such work internally or may seek to tender such systems management to the commercial sector. This project will explore the system sustainability dynamics through the development of a business development plan by consulting with relevant budgeting authorities in the EC and Government sectors and by seeking guidance from the project External Advisory board made up of experts in the field of DRR/ CCA.

A business development plan will be developed to cover new data, interoperable analytical tools and the exploitation of the data fabric/ mesh. The potential of the tools and systems will be examined in both the public sector and the private sector, e.g. discussion around the best way to scale the use of tools further developed and made interoperable in the project.

The plans will include:

- Business model canvas for the identification of the market ecosystem (this may be in the public or private sectors)

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- Competition analysis
- Identify any patent/ protection needs of products
- Identify audiences/ end user markets
- Pricing potential for identified audiences
- Delivery mechanism (e.g. SaaS, external platform, licenses, subscription etc.)
- Continuity of tools (remain in-house, development or exploitation by external partners)
- Go-to-market planning (if appropriate)


It is important to note that some analytical tools in the project will remain fully open source, whilst others particularly those with foreground IP developed in the commercial sector will need to consider both open source and commercial business potential. Data, tools and information will be placed on the Oasis Hub, Placard, weADAPT, Climate-Adapt and where appropriate Copernicus CDS or other identified venues for dissemination/ exploitation at any time during the Project, thus enabling the data to be exploited as quickly as possible.

### **Phase 3 - DIRECTED eLearning Portal**

Development of programmes that marry governance frameworks (**WP3**) that can be supported by innovative technical frameworks (**WP5**) to access, transform and integrate data and models into customized workflows for creating actionable solutions. Programmes would target vocational long-life training to support the Real World Labs, student support materials and provide support and help build risk and adaptation solutions, especially those identified by Real World Labs. In order to perpetuate learning programmes, a co-designed and co-developed “Training of Trainers” programme will be developed through a dedicated Workshop with trainers, and curriculum developed in response to needs, so that capability beyond the DIRECTED project is ensured. Workshops delivered both in-person and online will be highly participatory and practical, focusing on techniques, tools and tips of training management, with participants themselves designing, delivering and critiquing methods. A suitable e-learning portal will be identified during the project to deposit and make available all training materials produced; this will increase the ability to deliver 21st century learning and training opportunities.



**2.3 Summary**

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<b>SPECIFIC NEEDS</b>	<b>D &amp; E &amp; C MEASURES</b>	<b>EXPECTED RESULTS</b>
<p>Decision-making processes relevant to disaster risk management and CCA</p> <p>Institutional barriers to improved DRR and CCA management e.g. working over large areas with multiple municipalities and associated management structures</p> <p>Issues between national &amp; local government roles</p> <p>Lack of formal links between the scientific community and local actors &amp; the general public, as well as scientific knowledge transferred in an understandable way</p> <p>Separate organisations and departments dealing with DRR &amp; CCA</p> <p>The need to counteract increasing impacts from extreme weather events driven by climate change and socio-economic development</p> <p>The recent availability of multiple data and analytical tools, that could be used to assist risk assessment, planning and decision-making but are limited in scope (e.g. focus on one hazard), unable to provided more comprehensive risk assessment in a multi-risk context and spanning over a range of providers both in the public and private sector</p> <p>The ability to create actionable intelligence based on data and information from multiple sources</p> <p>The need to improve capabilities to prepare for and respond to unprecedented and compounding extreme weather events</p> <p>The need to break up silos: fragmented policy domains, sectors to enable interaction and exchange among actors</p>	<p>Project specific website</p> <p>Social media networks and targeting</p> <p>New audiences will be targeted through linking to particular influencers in relevant sectors</p> <p>Blogs</p> <p>Webinar series</p> <p>Conference attendance</p> <p>Visualisations</p> <p>Media Packs</p> <p>Academic journals</p> <p>Policy briefs</p> <p>User needs analysis</p> <p>Business Plan</p> <p>Development</p> <p>eLearning Portal &amp; work on integrating learnings into RWL participants</p>	<p>Real world lab case study publications</p> <p>Guidance for improving the way we manage DRR/ CCA</p> <p>Interoperability Report + Interoperability Factsheets – technical workflow descriptions &amp; illustrations</p> <p>Forecasting, risk assessment, and adaptation tools made interoperable to increase functionality and multi-risk outputs necessary for seamless early warning, risk assessment and risk reduction strategies &amp; decision-making</p> <p>Improved RISK-TANDEM Framework</p> <p>Policy brief on risk governance</p> <p>Guidance on good practices regarding interoperability of governance mechanisms</p> <p>Co-production methodology for disaster resilience – Paper</p> <p>Methodology for distilling assumptions in different modelling approaches - Paper</p> <p>Data Fabric, Data Mesh &amp; Data Virtualisation system architecture for DRR report</p> <p>Prototype data fabric/ mesh that enables linkages of data types, communication between stakeholders and output generation of results and information needed by DRR/CCA stakeholders</p> <p>eLearning Portal – to aid training and training the trainer programmes for tools and systems developed in the Project</p>

TARGET GROUPS	OUTCOMES
National Government Institutions	<b>Project outcome:</b> RISK-TANDEM will enable the building of consensus approaches towards disaster risk management, reduction and climate adaptation for the four regions of the RWLs
Regional and municipal civil authorities - including disaster management, planning authorities and cross regional municipalities	<b>Project outcome:</b> as a result of co-production work Disaster Resilience Planning Reports will be developed and included in local planning in the RWLs
First/second responders	<b>Project outcome:</b> The DATA-FABRIC ecosystem will provide a prototype system and tools enabling replicable workflows of work including multiple stakeholder organisations, all types of quantitative and qualitative: including data, maps, visualisations and text formats for communications to diverse stakeholders. The system is intended to radically reform the management and communications for disaster management, risk assessment and adaptation planning enabling actionable decisions using complex and multiple data sources. We intend for these tools to be replicated across Europe and beyond.
Utility companies	<b>Project outcome:</b> From within the Project a range of existing tools in flood risk assessment, adaptation planning, forecasting, citizen App will be enabled to become interoperable – thus improving multi-hazard risk assessment capabilities and functions – on top of this the work on interoperability is set to develop a standard so that multiple tools and data from beyond the project can also become interoperable for decision support for multiple stakeholders across sectors and European regions and beyond.
Insurance & Reinsurance	
IEAFRI	
NGO's	<b>Project outcome:</b> Governance workflows on a range of case studies will be implemented in the RWLs covering the multiple municipalities in city and countryside contexts.
Health and social care organisations	<b>Project outcome:</b> The EC and national policy-makers in Germany, Hungary, Denmark and Italy will have access to policy recommendations from DIRECTED Project. We envisage this will assist future governance of disasters and climate adaptation planning.
Communities and individuals	<b>Project outcome:</b> Two municipalities will have conducted cost/ benefit analysis of potential climate adaptation actions enabling strong needs analysis of climate adaptations that increases the potential for investment.
	<b>Scientific:</b> stocktaking of standards for the interoperability of data and models, identifying gaps and requirements to exchange information between different phases of DRM and CCA cycle and across hazards and integrating quantitative and qualitative indicators. This will provide an interoperability framework to the DRR and CCA community. that enables future tool development and can become part of a wider network for decision making data, tools and systems increasing the potential to provide actionable intelligence based on data and information from multiple sources. Through the production of workflow processes within DIRECTED the provision at what stages, to whom and in what format scientific information is included and communicated increases access to actionable science by all levels of government and society.
	<b>Economic:</b> The breakdown of silos (e.g. cross boundary municipalities, multiple stakeholder groups) in the DRR and CCA process will increase the economic efficiency of work and linked funding by creating more seamless workflows, preventing duplication of spend on the same actions with the potential to more carefully budget and target spend across actors. Cost benefit analysis will increase the potential to implement adaptation actions, targeted at locations most at risk, thus reducing the overall spend to enable increased resilience by society. Losses from climate disasters are potentially reduced over time in the regions of billions of Euros.
	<b>Societal:</b> Losses from climate disasters are reduced through enhanced disaster risk reduction based on preventive actions, better societal preparedness and resilience and improved disaster risk management in a systemic. Enabling scientific outputs to more rapidly be utilised by DRR and CCA actors and also directly communicated to the general public – helping to inform potential for damage and then actions required across society including at household & business levels. Supporting first, second and third responders with forecast and risk assessment information they need to utilise emergency services more effectively and training materials.



### 3.1.3 Resources to be committed

A budget of 5.283.350,00 Euro has been allocated in a balanced way across WPs and consortium partners, taking account of partners' roles and responsibilities. About 34% has been allocated to the RWLs (**WP1**) associated with the activities to connect with partners and stakeholders in a deep co-creation and co-evaluation process. The efforts related to the innovation **WP2**, **WP3**, **WP4**, and **WP5** have been allocated 18%, 15%, 11% and 9% of the total budget. For the communication, dissemination, exploitation work and the efforts to maximise impacts 13% of the budget have been assigned. Other costs total ca. 355.700 EUR with major amounts allocated to RWL activities and travel costs for project partners and external partners. Sub-contracting is planned for external services including set-up and maintenance of the project website, other IT developments (apps and online tools) as well as for other potential expenses such as translation services or purchase of site specific proprietary data. For subcontracting as listed in Table 3.1.g Article 6.2.B and 9.3 of the GA and its principles are applicable and respected during the selection of the subcontractor (i.a. best value for money, no conflict of interest).

**Table 3.1g: 'Subcontracting costs' items (Article 6.2.B and 9.3 of the GA and its principles are applicable and respected during the selection of the subcontractor (i.a. best value for money, no conflict of interest))**

1/TUBS		
	Cost (€)	Description of tasks and justification
<b>Subcontracting</b>	115.000	Creation and maintenance of project website and budget to cover costs related to the involvement of additional local partners in RWLs, provide translation services during local stakeholder events preparation and provision of site specific and proprietary data required for DRR and CCA modelling in RWLs by third parties.

2/PIK		
	Cost (€)	Description of tasks and justification
<b>Subcontracting</b>	30.000	IT development of a user friendly interface for the Future Danube model for visualizing results for floods, droughts, intense precipitation and heatwaves and carrying out interactive analysis.

**Table 3.1h: 'Purchase costs' items (travel and subsistence, equipment and other goods, works and services)**

7/REGIONH		
	Cost (€)	Justification
<b>Travel and subsistence</b>	15.000	Travel cost for participation of staff members in project meetings, final conference, and joint RWL activities
<b>Equipment</b>		
<b>Other goods, works and services</b>	15.000	Hosting local stakeholder workshops in RWL Copenhagen and Capital Region (5 multi-day workshops) including catering for coffee breaks, lunches, conference room and services
<b>Remaining purchase costs (&lt;15% of pers. Costs)</b>		
<b>Total</b>	30.000	

8/ARSTPC_ER		
	Cost (€)	Justification
<b>Travel and subsistence</b>	10.000	Travel cost for participation of staff members in project meetings, final conference, and joint RWL activities
<b>Equipment</b>		
<b>Other goods, works and services</b>	15.000	Hosting local stakeholder workshops in RWL Emiglia Romana Region (5 multi-day workshops) including catering for coffee breaks, lunches, conference room and services
<b>Remaining purchase costs (&lt;15% of pers. Costs)</b>		

<b>Costs)</b>		
<b>Total</b>	25.000	
<b>9/G&amp;C</b>		
	<b>Cost (€)</b>	<b>Justification</b>
<b>Travel and subsistence</b>	10.000	Travel cost for participation of staff members in project meetings, final conference, and joint RWL activities
<b>Equipment</b>		
<b>Other goods, works and services</b>	15.000	Hosting local stakeholder workshops in RWL Copenhagen and Capital Region (5 multi-day workshops) including catering for coffee breaks, lunches, conference room and services
<b>Remaining purchase costs (&lt;15% of pers. Costs)</b>		
<b>Total</b>	25.000	

**Table 3.1i: 'Other costs categories' items (e.g. internally invoiced goods and services)**

Not applicable

<b>Participant Number/Short Name</b>		
	<b>Cost (€)</b>	<b>Justification</b>
<b>Internally invoiced goods and services</b>	NA	NA

**Table 3.1j: 'In-kind contributions' provided by third parties**

Not applicable

<b>Participant Number/Short Name</b>			
<b>Third party name</b>	<b>Category</b>	<b>Cost (€)</b>	<b>Justification</b>
	NA	NA	NA

### 3.2 Capacity of participants and consortium as a whole

The DIRECTED consortium has unique and unparalleled strengths and expertise for a successful implementation of the project. The highly qualified inter-disciplinary consortium consists of 18 partners with extensive experience and complementary knowledge and skills who are distinguished in their fields and have a long-time track record of successfully implementing European, international and national collaborative research and innovation projects. Our consortium matches the knowledge, expertise and skills required in the HORIZON-CL3-2021-DRS-01-02 call including both natural sciences, and SSH disciplines. All partners are knowledgeable in open science practices and experience in gender aspects related to disaster risk reduction and climate change impacts. The consortium is equally balanced among academic partners from SSH disciplines (4 partners: IASS, UCC, SEI, IIASA) and natural sciences (5 partners: TUBS, GFZ, PIK, DTU, ETH). Partners from the private sector (3 partners: OASIS, GECO, 52N) ensure involvement of know-how about practical implementation and link to the market and uptake of tools by potential users. The largest group consists of communities, local or regional authorities and other practical partners from four different EU Member States (6 partners: REGIONH, ARSTPC-ER, G&C, EV, ZSRT, and ARP AE) with responsibilities for emergency management, civil protection (first and second responders) and/or DRR and CCA in the RWL regions. ZSRT is part of a Visegrad cooperation for disaster management, and in that role able to deliver and disseminate project outcomes to organisations in the entire Central European Visegrad region.

Table Overview of DIRECTED consortium partners' skills and expertise for the priority working areas

Area of expertise	Research and Innovation							Communication & Exploitation					Policy & Society Interface				
	TTIRS/CEF7	DIK	DTTI	ETH	IASS	SEI	IIASA	OASIS	CFCC	TIC	52N	G&C	REGIONH	ARSTDC-FR	FV	7SRT	ADPAE
<b>Priority thematic areas</b>																	
<b>DRR + CCA</b>																	
Hazard modelling	X	X	X	X				X	X					X		X	X
Risk modelling and assessment	X	X	X	X	X			X	X	X		X		X		X	X
Early warning	X	X		X	X				X					X		X	X
Emergency response			X		X									X		X	
Climate adaptation		X	X	X		X		X	X	X				X			
Climate Change Projections		X	X					X		X						X	X
Climate Change impact assessment	X	X	X	X	X			X	X	X		X					X
User and stakeholder engagement	X	X	X	X	X	X		X	X	X		X	X	X		X	
<b>Social Sciences and Humanities</b>																	
Risk governance			X		X	X				X		X	X	X		X	
Co-production and implementation	X	X	X		X	X			X	X		X	X	X		X	X
Environmental economics			X														
Human geography						X		X	X		X					X	X
Sociology and psychology					X											X	
Political science					X	X				X							
Training program design		X	X		X	X				X						X	
<b>Technology &amp; market knowledge</b>																	
data management systems	X	X	X	X				X	X	X	X			X		X	X
IT-services		X				X		X	X							X	X
cloud computing		X							X		X						
business model innovation								X	X		X	X				X	
evaluation of impacts		X		X	X			X	X	X		X		X		X	
special rescue equipment and innovation														X		X	
Data Architecture											X						
Data analytics											X						
Big data and real-time data pipelines											X						
Data Fabric											X						
Cyber risk management											X						

### 3.2.1 Role and budget of Associated Partners

The DIRECTED consortium includes three associated partners from UK (OASIS, SEI) and one associated partner from Switzerland (ETH). The role and contribution of these partners is detailed in the work-package descriptions and assignment of responsibilities for deliverables.

The Associated Partners OASIS, SEI, and ETH will not receive any EU funding and the budget set out in this subsection (Table Associated partners budget) will be provided by the UK and Swiss Governments respectively. The Swiss Government has provided a financial guarantee (<https://www.sbfi.admin.ch/sbfi/en/home/research-and-innovation/international-cooperation-r-and-i/eu-framework-programmes-for-research/horizon-europe.html/>) to cover the project costs of Swiss organisations.

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OASIS HUB limited is based in London (UK). OASIS works as an aggregator for catastrophe, extreme weather and environmental risk data, tools & services, as well to provide data set enhancement, development and data aggregation services. The idea behind OASIS HUB was to create an open, transparent, data platform that would inevitably help provide environmental, climate change and catastrophe risk information to business and wider society, whilst providing everyone with a platform that encourages collaboration and crossover around data and services. Further, OASIS has profound expertise in DRR&CCA innovation projects with a particular focus on stakeholder engagement, communication, dissemination and exploitation. In our consortium OASIS will lead work package 6 on Dissemination&Communication&Exploitation and Impacts.

Stockholm Environment Institute Oxford Office limited (SEI) is an international non-profit research and policy organization based in Oxford (UK). SEI's work focuses on bridging science and policy on climate-related issues and sustainable development with the aim to inform effective adaptation to climate change, and climate-related governance and policy-making. SEI features landmark developments regarding co-production processes with stakeholders (TANDEM) and the Connectivity HUB which aims to help the CCA and DRR communities to work together. This interactive "search and discovery" hub allows people in these fields to find potential synergies, to better communicate with one another, and to learn about which organisations are working on what issues. In the DIRECTED project SEI will lead work package 4 on Co-production.

Eidgenoessische Technische Hochschule Zuerich (ETH), Department of Environmental Systems, Weather and Climate Risks Group is an internationally leading research group on climate risk assessment and economics of climate adaptation. ETH is based in Zurich (Switzerland) and will contribute particularly to work-package 2 on data and model interoperability. With the open source climate risk modelling tool CLIMADA, ETH provides key knowledge about multi-hazard multi-risk modelling using open data sources.

## Table Overview of budget for associated partners

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Associated Partner Name	Personnel Costs Actual/unit/ same owner	Subcontracting Costs	C.1 Travel and Subsistence	Purchase costs C.2 Equipment	C.3 Other goods, Works and services	Indirect costs flat rate 25%	TOTAL Costs	Funding RATE	Maximum EC Contribution
<b>OASIS</b>	269.700,00 €	56.000,00 €	10.000,00 €	0,00 €	0,00 €	69.925,00 €	405.625,00 €	70 %	0,00 €
<b>SEI</b>	464.000,00 €	40.000,00 €	15.000,00 €	0,00 €	13.000,00 €	123.000,00 €	655.000,00 €	100 %	0,00 €
<b>ETH</b>	209.208,00 €	0,00 €	7.227,00 €	0,00 €	9.545,00 €	56.495,00 €	282.475,00 €	100 %	0,00 €

Table 'Subcontracting costs' items (Article 6.2.B and 9.3 of the GA and its principles are applicable and respected during the selection of the subcontractor (i.a. best value for money, no conflict of interest) for associated partners

<b>OASIS</b>	<b>Cost (€)</b>	<b>Description of tasks and justification</b>
	56.000	Development CAIMAN App
<b>SEI</b>		
	<b>Cost (€)</b>	<b>Description of tasks and justification</b>
	40.000	IT development Connectivity HUB, TANDEM online tool and open-source taxonomy



#### 4. Ethics self-assessment

The proposal went through an ethics assessment because issues were identified regarding H-HUMANS, POPD – PERSONAL DATA, NEC – NON EU COUNTRIES, AI – ARTIFICIAL INTELLIGENCE. However all issues will be properly managed and the proposal has been cleared. The only requirement is that an independent ethics advisor with expertise in AI and ML needs to be appointed.

An independent Ethics Advisor with expertise in AI and ML to monitor the ethical concerns related to this project will be appointed. Periodic reports from the Ethics Advisor will be provided in project months 3, 12, 24, and 36.

##### Ethics Issues Table

<b>1. Human Embryonic Stem Cells and Human Embryos</b>	
Does this activity involve Human Embryonic Stem Cells (hESCs)?	no
Does this activity involve the use of human embryos?	no
<b>2. Humans</b>	
Does this activity involve human participants?	no
Does this activity involve interventions (physical also including imaging technology, behavioural treatments, etc.) on the study participants?	no
Does this activity involve conducting a clinical study as defined by the Clinical Trial Regulation (EU 536/2014)? (using pharmaceuticals, biologicals, radiopharmaceuticals, or advanced therapy medicinal products)	no
<b>3. Human Cells / Tissues (not covered by section 1)</b>	
Does this activity involve the use of human cells or tissues?	no
<b>4. Personal Data</b>	
Does this activity involve processing of personal data?	no
Does this activity involve further processing of previously collected personal data (including use of preexisting data sets or sources, merging existing data sets)?	no
Is it planned to export personal data from the EU to non-EU countries? Specify the type of personal data and countries involved	no
Is it planned to import personal data from non-EU countries into the EU or from a non-EU country to another non-EU country? Specify the type of personal data and countries involved	no
Does this activity involve the processing of personal data related to criminal convictions or offences?	no
<b>5. Animals</b>	
Does this activity involve animals?	no
<b>6. Non-EU Countries</b>	
Will some of the activities be carried out in non-EU countries?	yes (pages 1-45)
United Kingdom (Partner: OASIS HUB LIMITED, Partner: SEI Oxford) Switzerland (Partner: ETH Zürich)	
In case non-EU countries are involved, do the activities undertaken in these countries raise potential ethics issues?	no
It is planned to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?	no
Is it planned to import any material (other than data) from non-EU countries into the EU or	no
Is it planned to export any material (other than data) from the EU to non-EU countries? For data exports, see section 4.	no
Does this activity involve low and/or lower middle income countries, (if yes, detail the benefit-sharing actions planned in the self-assessment)	no
Could the situation in the country put the individuals taking part in the activity at risk?	no

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7. Environment, Health and Safety	
Does this activity involve the use of substances or processes that may cause harm to the environment, to animals or plants.(during the implementation of the activity or further to the use of the results, as a possible impact)?	no
Does this activity deal with endangered fauna and/or flora / protected areas?	no
Does this activity involve the use of substances or processes that may cause harm to humans, including those performing the activity.(during the implementation of the activity or further to the use of the results, as a possible impact)?	no
8. Artificial Intelligence	
Does this activity involve the development, deployment and/or use of Artificial Intelligence? (if yes, detail in the self-assessment whether that could raise ethical concerns related to human rights and values and detail how this will be addressed).	no
9. Other Ethics Issues	
Are there any other ethics issues that should be taken into consideration?	no
Ethical dimension of the objectives, methodology and likely impact	
The DIRECTED project does not foresee any ethical issues related to its content, objectives and methodology. Shall any ethical issue emerge during the project execution, the DIRECTED consortium will inform the European Commission and promptly take any necessary compliance measure.	
Compliance with ethical principles and relevant legislations	
The DIRECTED consortium commits itself to comply with the highest standards of ethical scientific work and follow all relevant legislation in all the countries of its execution. The project will fulfil all fundamental ethical principles exposed in the Charter of Fundamental Rights of the European Union. All data transferred from the EU to a non-EU country will be in accordance with the EU General Data Protection Regulation (GDPR).	

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## 5. Security

The project went through the security scrutiny and not security issues have been identified.

## ANNEX 2

## ESTIMATED BUDGET FOR THE ACTION

Forms of funding	Estimated eligible <sup>1</sup> costs (per budget category)										Estimated EU contribution <sup>2</sup>				
	Direct costs					Indirect costs					Total costs	Funding rate % <sup>4</sup>	Maximum EU contribution <sup>5</sup>		Maximum grant amount <sup>6</sup>
	A. Personnel costs		B. Subcontracting costs		C. Purchase costs		D. Other cost categories		E. Indirect costs <sup>3</sup>	Requested EU contribution			Maximum EU contribution <sup>5</sup>		
Actual costs	Unit costs (usual accounting practices)	Actual costs	Unit costs <sup>7</sup>	Actual costs	Actual costs	Actual costs	Actual costs	Unit costs (usual accounting practices)	Flat-rate costs <sup>8</sup>	U	g = f * U%	h	m		
1 - TTBS	448 001,00	0,00	115 000,00	0,00	18 000,00	0,00	39 200,00	0,00	126 447,75	747 238,75	100	747 238,75	747 238,75	747 238,75	
2 - PIK	280 000,00	0,00	30 000,00	0,00	15 000,00	0,00	8 000,00	0,00	75 750,00	408 750,00	100	408 750,00	408 750,00	408 750,00	
3 - DTU	391 000,00	0,00	0,00	0,00	15 000,00	0,00	13 000,00	0,00	104 250,00	523 750,00	100	523 750,00	523 750,00	523 750,00	
4 - GICO	432 000,00	0,00	0,00	0,00	15 000,00	0,00	0,00	0,00	111 250,00	558 750,00	70	391 125,00	391 125,00	391 125,00	
5 - IASS	312 000,00	0,00	0,00	0,00	15 000,00	0,00	5 000,00	0,00	83 000,00	415 000,00	100	415 000,00	415 000,00	415 000,00	
6 - TTC	390 000,00	0,00	0,00	0,00	15 000,00	0,00	16 000,00	0,00	105 250,00	526 250,00	100	526 250,00	526 250,00	526 250,00	
7 - REGIONH	168 000,00	0,00	0,00	0,00	15 000,00	0,00	15 000,00	0,00	49 500,00	247 500,00	100	247 500,00	247 500,00	247 500,00	
8 - ABSTPC-ER	53 200,00	0,00	0,00	0,00	10 000,00	0,00	15 000,00	0,00	19 500,00	97 750,00	100	97 750,00	97 750,00	97 750,00	
9 - G&C	138 000,00	0,00	0,00	0,00	10 000,00	0,00	10 000,00	0,00	40 750,00	203 750,00	70	142 625,00	142 625,00	142 625,00	
10 - ILLASA	195 000,00	0,00	0,00	0,00	10 000,00	0,00	2 000,00	0,00	51 750,00	258 750,00	100	258 750,00	258 750,00	258 750,00	
11 - EV	248 400,00	0,00	0,00	0,00	15 000,00	0,00	15 000,00	0,00	69 000,00	348 000,00	100	348 000,00	348 000,00	348 000,00	
12 - ZSRIT	80 000,00	0,00	0,00	0,00	10 000,00	0,00	0,00	0,00	22 500,00	112 500,00	100	112 500,00	112 500,00	112 500,00	
13 - ARPAE	38 000,00	0,00	0,00	0,00	5 000,00	0,00	0,00	0,00	10 250,00	53 750,00	100	53 750,00	53 750,00	53 750,00	
14 - GPZ	250 159,00	0,00	0,00	0,00	6 000,00	0,00	8 000,00	0,00	66 047,25	330 256,25	100	330 256,25	330 256,24	330 256,24	
15 - EN	331 100,00	0,00	0,00	0,00	10 000,00	0,00	20 000,00	0,00	90 250,00	451 375,00	100	451 375,00	451 375,00	451 375,00	
16 - ETH															
17 - OASIS															
18 - SEI															
<b>Z consortium</b>	<b>3 754 980,00</b>	<b>0,00</b>	<b>145 000,00</b>	<b>0,00</b>	<b>184 000,00</b>	<b>0,00</b>	<b>171 200,00</b>	<b>0,00</b>	<b>1 027 670,00</b>	<b>5 283 350,00</b>		<b>5 054 600,00</b>	<b>5 054 599,99</b>	<b>5 054 599,99</b>	

<sup>1</sup> See Article 6 for the eligibility conditions. All amounts must be expressed in EUR (see Article 21 for the conversion rules).

<sup>2</sup> The consortium remains free to decide on a different internal distribution of the EU funding (via the consortium agreement, see Article 7).

<sup>3</sup> Indirect costs already covered by an operating grant (reserved under any EU funding programme) are ineligible (see Article 6.3). Therefore, a beneficiary/affiliated entity that receives an operating grant during the action duration cannot declare indirect costs for the year(s)/reporting period(s) covered by the operating grant, unless they can demonstrate that the operating grant does not cover any costs of the action. This requires specific accounting tools. Please immediately contact us via the EU Funding & Tenders Portal for details.

<sup>4</sup> See Data Sheet for the funding rates(s).

<sup>5</sup> This is the theoretical amount of the EU contribution to costs, if the reimbursement rate is applied to all the budgeted costs. This theoretical amount is then capped by the maximum grant amount.

<sup>6</sup> The maximum grant amount is the maximum grant amount decided by the EU. It normally corresponds to the requested grant, but may be lower.

<sup>7</sup> See Annex 2. Additional information on the estimated budget<sup>1</sup> for the details (units, cost per unit).

<sup>8</sup> See Data Sheet for the flat-rate.

**ANNEX 2a****ADDITIONAL INFORMATION ON UNIT COSTS AND CONTRIBUTIONS****SME owners/natural person beneficiaries without salary** (Decision C(2020) 7115<sup>1</sup>)Type: unit costsUnits: days spent working on the action (rounded up or down to the nearest half-day)Amount per unit (daily rate): calculated according to the following formula:

{EUR 5 080 / 18 days = **282,22**}  
 multiplied by  
 {country-specific correction coefficient of the country where the beneficiary is established}

The country-specific correction coefficients used are those set out in the Horizon Europe Work Programme (section Marie Skłodowska-Curie actions) in force at the time of the call (see [Portal Reference Documents](#)).

**HE and Euratom Research Infrastructure actions**<sup>2</sup>Type: unit costsUnits<sup>3</sup>: see (for each access provider and installation) the unit cost table in Annex 2bAmount per unit\*: see (for each access provider and installation) the unit cost table in Annex 2b

\* Amount calculated as follows:

For trans-national access:

$$\frac{\text{average annual total trans-national access costs to the installation (over past two years}^4)}{\text{average annual total quantity of trans-national access to the installation (over past two years}^5)}$$

For virtual access:

$$\frac{\text{total virtual access costs to the installation (over the last year}^6)}{\text{total quantity of virtual access to the installation (over the last year}^7)}$$
**Euratom staff mobility costs**<sup>8</sup>**Monthly living allowance**Type: unit costs

<sup>1</sup> Commission [Decision](#) of 20 October 2020 authorising the use of unit costs for the personnel costs of the owners of small and medium-sized enterprises and beneficiaries that are natural persons not receiving a salary for the work carried out by themselves under an action or work programme (C(2020)7115).

<sup>2</sup> [Decision](#) of 19 April 2021 authorising the use of unit costs for the costs of providing trans-national and virtual access in Research Infrastructure actions under the Horizon Europe Programme (2021-2027) and the Research and Training Programme of the European Atomic Energy Community (2021-2025).

<sup>3</sup> Unit of access (e.g. beam hours, weeks of access, sample analysis) fixed by the access provider in proposal.

<sup>4</sup> In exceptional and duly justified cases, the granting authority may agree to a different reference period.

<sup>5</sup> In exceptional and duly justified cases, the granting authority may agree to a different reference period.

<sup>6</sup> In exceptional and duly justified cases, the granting authority may agree to a different reference period.

<sup>7</sup> In exceptional and duly justified cases, the granting authority may agree to a different reference period.

<sup>8</sup> [Decision](#) of 15 March 2021 authorising the use of unit costs for mobility in co-fund actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025).

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Units: months spent by the seconded staff member(s) on research and training in fission and fusion activities (person-month)

Amount per unit\*: see (for each beneficiary/affiliated entity and secondment) the unit cost table in Annex 2b


\* Amount calculated as follows from 1 January 2021:  
 {EUR 4 300 multiplied by  
 country-specific correction coefficient\*\* of the country where the staff member is seconded}<sup>9</sup>

\*\*Country-specific correction coefficients as from 1 January 2021<sup>10</sup>

EU-Member States<sup>11</sup>

Country / Place	Coefficient (%)
Bulgaria	59,1
Czech Rep.	85,2
Denmark	131,3
Germany	101,9
Bonn	95,8
Karlsruhe	98
Munich	113,9
Estonia	82,3
Ireland	129
Greece	81,4
Spain	94,2
France	120,5
Croatia	75,8
Italy	95
Varese	90,7
Cyprus	78,2
Latvia	77,5
Lithuania	76,6
Hungary	71,9
Malta	94,7
Netherlands	113,9
Austria	107,9
Poland	70,9
Portugal	91,1
Romania	66,6
Slovenia	86,1

<sup>9</sup> Unit costs for living allowances are calculated by using a method of calculation similar to that applied for the secondment to the European Commission of seconded national experts (SNEs).

<sup>10</sup>  For the financial statements, the amount must be adjusted according to the actual place of secondment. The revised coefficients were adopted in the Decision authorising the use of unit costs for the Fusion Programme co-fund action under the Research and training Programme of the European Atomic Energy Community 2021-2025. They are based on the 2020 Annual update of the remuneration and pensions of the officials and other servants of the European Union and the correction coefficients applied thereto (OJ C 428, 11.12.2020) to ensure purchasing power parity. The revised coefficient are applied as from 1 January 2021 through an amendment to the grant agreement.

<sup>11</sup> No correction coefficient shall be applicable in Belgium and Luxembourg.

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Slovakia	80,6
Finland	118,4
Sweden	124,3

#### Third countries

Country/place	Coefficient (%)
China	82,2
India	72,3
Japan	111,8
Russia	92,7
South Korea	92,3
Switzerland	129,2
Ukraine	82,3
United Kingdom	97,6
United States	101,4 (New-York) 90,5 (Washington)

#### Mobility allowance

Type: Unit costs

Units: months spent by the seconded staff member(s) on research and training in fission and fusion activities (person-month)

Amount per unit: EUR 600 per person-month; see (for each beneficiary/affiliated entity and secondment) the unit cost table in Annex 2b

#### Family allowance

Type: unit costs

Units: months spent by the seconded staff member(s) on research and training in fission and fusion activities (person-month)

Amount per unit: EUR 660 per person-month; see (for each beneficiary/affiliated entity and secondment) the unit cost table in Annex 2b


#### Education allowance

Type: Unit costs

Units: months spent by the seconded staff member(s) on research and training in fission and fusion activities (person-month)

Amount per unit\*: see (for each beneficiary/affiliated entity and secondment) the unit cost table in Annex 2b

\*Amount calculated as follows from 1 January 2021:  
{EUR 283.82 x number of dependent children<sup>12</sup>}

<sup>12</sup> For the estimated budget (Annex 2): an average should be used. ( For the financial statements, the number of children (and months) must be adjusted according to the actual family status at the moment the secondment starts.)

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**POTSDAM-INSTITUT FUR KLIMAFOLGENFORSCHUNG EV (PIK)**, PIC 999464042, established in TELEGRAFENBERG A31, POTSDAM 14412, Germany,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Frauke HANEBERG with ECAS id nhanebfr signed in the Participant Portal on 09/09/2022 at 12:05:58 (transaction id SigId-45530-yFXaT9spF531KDBrs0pTTrYZOTTLjmu6xMAGQXhjk1FDDh8yOEkG4WmRiQ i57YWi9rkzLgVUG4XpkngzgX7GT-rS0vSrmBGYCyqUuASzZuFeW-Wdt klLlTYdlP9VRps8hzMG8Vef3IOp1pIZkh75LK1rsBdHbFc6zKntzwjKc c1qKoyL06FczKuhdHt7RU58vSMO). Timestamp by third party at 2022.09.09 13:06:03 CEST



Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

#### **ACCESSION FORM FOR BENEFICIARIES**

**DANMARKS TEKNISKE UNIVERSITET (DTU)**, PIC 999990655, established in ANKER ENGELUNDSVEJ 1 BYGNING 101 A, KGS LYNGBY 2800, Denmark,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Mette Wier with ECAS id n002qvzd signed in the Participant Portal on 09/09/2022 at 13:08:17 (transaction id SigId-46439-EgzRAIKWP9 OeorvyxIBYM5n6jFC5HLLowibwejQGwq14dHmgzGWzofyUJsBDCyu LmwsaVK0gl81mWKznxPWusY0-r50vSrmBGYCyqUuASzZuFeW-f619I 0duRzOIEpudxZjQJOm4QYzqIQEK7MgRU2ohUzzqvFhmj3aT9StDNq DOVvj18EoEY4zTBZCMO6VfkmOfZqY). Timestamp by third party at 2022.09.09 14:08:22 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

#### **ACCESSION FORM FOR BENEFICIARIES**

**GECOSISTEMA SRL (GECO)**, PIC 959248327, established in PIAZZA MALATESTA 21, RIMINI RN 47900, Italy,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between** TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) **and** the **European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Stefano BAGLI with ECAS id nbaglist signed in the Participant Portal on 12/09/2022 at 10:33:33 (transaction id SigId-55726-QzZW4jqMgF GRbA5iDCAHHjcbmtgWuLUuuGNq8oTGncUgw99FTC16pGcjszi1xVo QPLfjiG9MS7jLesyDwcAVA9-rS0vSrmBGYCyqUuASzzuFeW-E3A32O1 6E6kgnv9c8s2k2hPXyppRywMxflbcP0V4mzxM0W6zHTzpgXzgyvPU aoB0BFVfwzta0a47YyoIYxI5Gh). Timestamp by third party at 2022.09.12 11:33:39 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**INSTITUTE FOR ADVANCED SUSTAINABILITY STUDIES EV (IASS)**, PIC 960542404, established in BERLINER STRASSE 130, POSTDAM 14467, Germany,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Mark LAWRENCE with ECAS id nlawremr signed in the Participant Portal on 16/09/2022 at 21:24:49 (transaction id SigId-5056-XDdKJlxD WZU74zQTGCKtMTw7zS6L8CgrXqzoOwaCNTcomfWFvczIQ7rqlcUreB AmsbF6WqSFMiveUc9lBBN6qTm-rS0vSrmBGYCztzaPvjAjfm-h2NIbm Ww53XJHMRNyOt4ovDguzzkFGlmoNOIZV7k1lTmzqG4nWzmdsBLLFkz mrzxlfV2E4ZD11vmIZFzaPnVVmQ8). Timestamp by third party at 2022.09.16 22:24:55 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK (UCC)**,  
PIC 999975717, established in WESTERN ROAD, CORK T12 YN60, Ireland,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

John Cryan with ECAS id n006o5rx signed in the Participant Portal on 09/09/2022 at 16:26:49 (transaction id SigId-49452-bMxR2IK9nUUDfz soVwxExHQVw3POXuvh2tTyIlg5WMr1EzorzQW1VB36yO8F7A9PHyJ9a QGBacAMW9JUuMjIM0qW-r50vSrmBGYcyqUuASzzuFeW-1BH3zLG6 mmL5PoRTzc6m4BK2ajABX0YPG8ABDgaYBhiApbF6DK6uQbUzWwV NF8hM9V6xwMt9jdWEZqu8phi1Hze). Timestamp by third party at 2022.09.09 17:26:56 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**REGION HOVEDSTADEN (REGIONH)**, PIC 999654744, established in KONGENS VAENGE 2, HILLEROD 3400, Denmark,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.


By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

David Meinke with ECAS id n009p0t9 signed in the Participant Portal on 21/09/2022 at 15:12:00 (transaction id SigId-10522-zeDI8kjtwaG9VjwRtOTpThfjb8ut19cD5tseiYzwqwrFMj4pVKIt2HINI54swU3TWP9tvzw0vxfZ2gXUAn0MI3m-yntOf97TTHqjsJPSTodUPy-t1h230ahs5bDRpMTO86YahkUoVH1df857wRUY3sZTvomqP2ZdwnjgJR0ZvOX88zuzn5ZvPDR LZ1cXtlSjv4). Timestamp by third party at 2022.09.21 16:12:06 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**AGENZIA REGIONALE PER LA SICUREZZA TERRITORIALE E LA PROTEZIONE CIVILE (ARSTPC-ER)**, PIC 998349803, established in VIALE SILVANI 6, BOLOGNA 40122, Italy,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between** TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) **and** the **European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Claudia Vezzani with ECAS id n009s1m5 signed in the Participant Portal on 13/09/2022 at 08:45:46 (transaction id SigId-66853-mMJBW7LXK4ALet1zG6ogJf3FEQ3ar4IbbzqjBz32dXozIeEsAiU8TuUZws3Q6qBOSNpZqFzIM7QBk9xrSnLhC6-r50vSrmBGYCyqUuASzzuFeW-UIPDWY1M9HAE6o4dQ6w6UfzYogIYPF34ck7X32P8giiZmxy6S8BCETnAm0ByATNejY8OmdCF3isZu9KzHCeyp5m). Timestamp by third party at 2022.09.13 09:45:54 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

#### **ACCESSION FORM FOR BENEFICIARIES**

**GENILLARD & CO GMBH (G&C)**, PIC 920168870, established in ISMANINGER STRASSE 102, MUNCHEN 81675, Germany,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Thomas DIESINGER with ECAS id ndiesith signed in the Participant Portal on 09/09/2022 at 11:28:46 (transaction id SigId-45000-3QlqDCmUQX1jsGxzzuEY3DgitUBWmVZjybr96czi1krAhwsO3Y4KVpZtW946N9BjWGBZriMAEOThgz96YOAl4-rS0vSrmBGyCyqUuASzzuFeW-vAmxEDr9eyby6gEeOjpGpDMb24dszPC04jVmj2UhhWxbmaVDUL5Qj1ZsxKGw5QyVvbpCDIdgPneeQgj0KMui). Timestamp by third party at 2022.09.09 12:28:54 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE (IIASA)**, PIC 999452596, established in Schlossplatz 1, LAXENBURG 2361, Austria,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

### **SIGNATURE**

For the beneficiary

Monica MANCHANDA with ECAS id ndieckul signed in the Participant Portal on 09/09/2022 at 11:41:29 (transaction id SigId-45220-Syw8y4 KYau2NF2QaiPmG7Y0m2ImkrT22RxQrM70ifjgg2zafrTWGsmgBeNr1i VvGxRvzkZekRR6PZ6197RFiHn-rS0vSrmBGYCyqUuASzuzFeW-7ZUq4I PLrDJAzgn5uzLEiTzXKw32fPB6kFRWFVjV4fAzKibye0eOpLy3bQxipeRz JBJLBA4eL3zsmeljfhS47AG). Timestamp by third party at 2022.09.09 12:41:33 CEST



Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### ANNEX 3

## ACCESSION FORM FOR BENEFICIARIES

**ERFTVERBAND (EV)**, PIC 939668974, established in AM ERFTVERBAND 6, BERGHEIM 50126, Germany,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Bernd BUCHER with ECAS id nbucherb signed in the Participant Portal on 16/09/2022 at 09:17:16 (transaction id SigId-4141-3YmR8 EudEcExfrzYdzRVY4jyvYfoGgFMHJJSNQ6s6wyqfngWUqlwL7T8Zzn o9zLOKCjzZkzfaGatYCHCtyEzub2u-yntOf97TTHq0czkUCLqKUS-hNfl kvuxRFyLvumQzYhj4t2zs9aNFUva8zI1NwYYcszybwSKc4U3cKBp1 B1p2nfvHrCsdiiLokzpxIHhOkNW). Timestamp by third party at 2022.09.16 10:17:23 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

#### **ACCESSION FORM FOR BENEFICIARIES**

**ZALA KULONLEGES MENTOK ES ONKENTES TUZOLTO EGYSULET (ZSRT)**, PIC 888552981, established in EPITOK UTJA 5 3//9, ZALAEGERSZEG 8900, Hungary,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Péter Horváth with ECAS id n0088vtg signed in the Participant Portal on 20/09/2022 at 08:23:16 (transaction id SigId-7517-XozpqB 9ZFuzR5ZeQj3tr8dHmoGBbaAaZtgc8yqFscRWi2pppSQcqhVVRP2kbU JSVHsGrFOHxjizeNKRzSb6PH9ZW-jpjZscgsw0KdV3jd7L1h9W-55aVeP ir1NUcoTwwKOW112xIYo5BOHjRfhno0IdJ5OdoH9hW227N7h3zUWST wMQP9fXfWxyWU4hEBfOzjmlecCt). Timestamp by third party at 2022.09.20 09:23:26 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**AGENZIA REGIONALE PER LA PREVENZIONE, L'AMBIENTE E L'ENERGIA DELL'EMILIA-ROMAGNA (ARPAE)**, PIC 999454633, established in VIA PO 5, BOLOGNA 40139, Italy,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.


By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

### **SIGNATURE**

For the beneficiary

Sandro Nanni with ECAS id n0089uis signed in the Participant Portal on 12/09/2022 at 10:53:00 (transaction id SigId-56083-ZHub7RAMfLujFx6y7FMaPFAzcmUU8MpUazI1HPXTY3oKYIYTYxfw1LIbyHj66CdzkQVv59vkLhmRStEAnuNznEO-r50vSrmBGYCyqUuASzZuFeW-yR05pT6v6gZLC54jzgjUQUSAi1DawGpNB0rEYTxuWAG8D4fTXsod72jfSOBZyWRn7d0bzaNSchWnYxd9NwfjPb). Timestamp by third party at 2022.09.12 11:53:05 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ (GFZ)**, PIC 999994341, established in TELEGRAFENBERG 17, POTSDAM 14473, Germany,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Daniela Sprengel with ECAS id n007nrv signed in the Participant Portal on 13/09/2022 at 10:53:27 (transaction id SigId-69419-nK78U2 euXBADPwSWWhQU2s30bapCr6sCnT2LvGudl1xYNzfA38fDLfOxeP1NN wMHhZrzag1QHvQBEnzzVLAwCl0-rS0vSrmBGYCyqUuASzzuFeW-1hq sdMzwWHVMEH0rjk8aI3CSphi7VUYXeKzbpOJp21rmATBsvsiWW2oqz nIH4P79L8J0d8Hv7TxOEpztj2vesya). Timestamp by third party at 2022.09.13 11:53:37 CEST

Grant Agreement number: 101073978 — DIRECTED — HORIZON-CL3-2021-DRS-01

 Associated with document Ref. Ares(2022)6149485 - 06/09/2022

### **ANNEX 3**

## **ACCESSION FORM FOR BENEFICIARIES**

**52 NORTH SPATIAL INFORMATION RESEARCH GMBH (52N)**, PIC 997237407, established in MARTIN LUTHER KING WEG 24, MUNSTER 48155, Germany,

**hereby agrees**

**to become beneficiary**

**in Agreement No 101073978 — DIRECTED** ('the Agreement')

**between TECHNISCHE UNIVERSITAET BRAUNSCHWEIG (TUBS) and the European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

**and mandates**

**the coordinator** to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 39.

By signing this accession form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

SIGNATURE

For the beneficiary

Benedikt Gräler with ECAS id n005hctw signed in the Participant Portal on 12/09/2022 at 12:26:30 (transaction id SigId-57570-wg9F5d dxXPVaDpWzgHfPmKPbzi91344mGS9xi48CX6vL3Y7JUVLutUCNY4O9 mXdNRpWLNqEN5m0MwyfcpNj8gX-rS0vSrmBGYCyqUuASzZuFeW-I QjPCRRZckM9XnL1rfOog1IIVx0zejI192yThV6EzysWq2oGaaB6MFF1X4 07eKAYZZObHdOFGTn11zYuxLOTegG). Timestamp by third party at 2022.09.12 13:26:37 CEST

Budget code	Budget code												Budget code <sup>2</sup>	Total costs	EU contribution <sup>3</sup>				Amount payable per period																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	A. Personnel costs		B. Support and other costs			C. Purchase costs			D. Other operating costs						EU contribution <sup>3</sup>	Minimum EU contribution <sup>4</sup>	Requested EU contribution	Total requested EU contribution																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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The beneficiary/affiliated entity shall provide the following information:  
 The information provided to complete, update and verify the costs and contributions declared in this report shall be provided upon request in the context of audits, reviews, audits and investigations (see Article 13, 20 and 21).  
 The costs and contributions to be allocated by the beneficiary and supporting organizations shall be provided upon request in the context of audits, reviews, audits and investigations (see Article 13, 20 and 21).  
 For each reporting period, the actual costs and contributions shall be provided in the context of audits, reviews, audits and investigations (see Article 13, 20 and 21).

1. Not a cost for the eligible condition. All amounts must be reported in EUR per Article 21 for the amount value.  
 2. For the calculation of the total amount of the reporting period, the reporting period costs - actual costs - are reported in the reporting period costs per cost of the action. This requires specific accounting tools. Please contact us immediately for the sending & feedback model for details.  
 3. See the sheet for the reimbursement (EU).  
 4. This is the theoretical amount of EU contribution costs for the system, calculated automatically (by multiplying the reimbursement rate by the costs declared). The amount requested (in the column "requested EU contribution") may be less.  
 5. See Annex 2: Additional information on the estimated budget for the details (sheet cost per unit).  
 6. See the sheet for the EU cost.

**ANNEX 5****SPECIFIC RULES****CONFIDENTIALITY AND SECURITY (— ARTICLE 13)****Sensitive information with security recommendation**

Sensitive information with a security recommendation must comply with the additional requirements imposed by the granting authority.

Before starting the action tasks concerned, the beneficiaries must have obtained all approvals or other mandatory documents needed for implementing the task. The documents must be kept on file and be submitted upon request by the coordinator to the granting authority. If they are not in English, they must be submitted together with an English summary.

For requirements restricting disclosure or dissemination, the information must be handled in accordance with the recommendation and may be disclosed or disseminated only after written approval from the granting authority.

**EU classified information**

If EU classified information is used or generated by the action, it must be treated in accordance with the security classification guide (SCG) and security aspect letter (SAL) set out in Annex 1 and Decision 2015/444<sup>1</sup> and its implementing rules — until it is declassified.

Deliverables which contain EU classified information must be submitted according to special procedures agreed with the granting authority.

Action tasks involving EU classified information may be subcontracted only with prior explicit written approval from the granting authority and only to entities established in an EU Member State or in a non-EU country with a security of information agreement with the EU (or an administrative arrangement with the Commission).

EU classified information may not be disclosed to any third party (including participants involved in the action implementation) without prior explicit written approval from the granting authority.

**ETHICS (— ARTICLE 14)****Ethics and research integrity**

The beneficiaries must carry out the action in compliance with:

- ethical principles (including the highest standards of research integrity)

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<sup>1</sup> Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).

and

- applicable EU, international and national law, including the EU Charter of Fundamental Rights and the European Convention for the Protection of Human Rights and Fundamental Freedoms and its Supplementary Protocols.

No funding can be granted, within or outside the EU, for activities that are prohibited in all Member States. No funding can be granted in a Member State for an activity which is forbidden in that Member State.

The beneficiaries must pay particular attention to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of persons, the right to non-discrimination, the need to ensure protection of the environment and high levels of human health protection.

The beneficiaries must ensure that the activities under the action have an exclusive focus on civil applications.

The beneficiaries must ensure that the activities under the action do not:

- aim at human cloning for reproductive purposes
- intend to modify the genetic heritage of human beings which could make such modifications heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed)
- intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer, or
- lead to the destruction of human embryos (for example, for obtaining stem cells).

Activities involving research on human embryos or human embryonic stem cells may be carried out only if:

- they are set out in Annex 1 or
- the coordinator has obtained explicit approval (in writing) from the granting authority.

In addition, the beneficiaries must respect the fundamental principle of research integrity — as set out in the European Code of Conduct for Research Integrity<sup>2</sup>.

This implies compliance with the following principles:

- reliability in ensuring the quality of research reflected in the design, the methodology, the analysis and the use of resources
- honesty in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair and unbiased way

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<sup>2</sup> European Code of Conduct for Research Integrity of ALLEA (All European Academies).



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- respect for colleagues, research participants, society, ecosystems, cultural heritage and the environment
- accountability for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts

and means that beneficiaries must ensure that persons carrying out research tasks follow the good research practices including ensuring, where possible, openness, reproducibility and traceability and refrain from the research integrity violations described in the Code.

Activities raising ethical issues must comply with the additional requirements formulated by the ethics panels (including after checks, reviews or audits; see Article 25).

Before starting an action task raising ethical issues, the beneficiaries must have obtained all approvals or other mandatory documents needed for implementing the task, notably from any (national or local) ethics committee or other bodies such as data protection authorities.

The documents must be kept on file and be submitted upon request by the coordinator to the granting authority. If they are not in English, they must be submitted together with an English summary, which shows that the documents cover the action tasks in question and includes the conclusions of the committee or authority concerned (if any).

## **VALUES (— ARTICLE 14)**

### **Gender mainstreaming**

The beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action and, where applicable, in line with the gender equality plan. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level.

## **INTELLECTUAL PROPERTY RIGHTS (IPR) — BACKGROUND AND RESULTS — ACCESS RIGHTS AND RIGHTS OF USE (— ARTICLE 16)**

### **Definitions**

Access rights — Rights to use results or background.

Dissemination — The public disclosure of the results by appropriate means, other than resulting from protecting or exploiting the results, including by scientific publications in any medium.

Exploit(ation) — The use of results in further research and innovation activities other than those covered by the action concerned, including among other things, commercial exploitation such as developing, creating, manufacturing and marketing a product or process, creating and providing a service, or in standardisation activities.

Fair and reasonable conditions — Appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.

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FAIR principles — ‘findability’, ‘accessibility’, ‘interoperability’ and ‘reusability’.

Open access — Online access to research outputs provided free of charge to the end-user.

Open science — An approach to the scientific process based on open cooperative work, tools and diffusing knowledge.

Research data management — The process within the research lifecycle that includes the organisation, storage, preservation, security, quality assurance, allocation of persistent identifiers (PIDs) and rules and procedures for sharing of data including licensing.

Research outputs — Results to which access can be given in the form of scientific publications, data or other engineered results and processes such as software, algorithms, protocols, models, workflows and electronic notebooks.

### **Scope of the obligations**

For this section, references to ‘beneficiary’ or ‘beneficiaries’ do not include affiliated entities (if any).

### **Agreement on background**

The beneficiaries must identify in a written agreement the background as needed for implementing the action or for exploiting its results.

Where the call conditions restrict control due to strategic interests reasons, background that is subject to control or other restrictions by a country (or entity from a country) which is not one of the eligible countries or target countries set out in the call conditions and that impact the exploitation of the results (i.e. would make the exploitation of the results subject to control or restrictions) must not be used and must be explicitly excluded from it in the agreement on background — unless otherwise agreed with the granting authority.

### **Ownership of results**

Results are owned by the beneficiaries that generate them.

However, two or more beneficiaries own results jointly if:

- they have jointly generated them and
- it is not possible to:
  - establish the respective contribution of each beneficiary, or
  - separate them for the purpose of applying for, obtaining or maintaining their protection.

The joint owners must agree — in writing — on the allocation and terms of exercise of their joint ownership (**‘joint ownership agreement’**), to ensure compliance with their obligations under this Agreement.

Unless otherwise agreed in the joint ownership agreement or consortium agreement, each joint owner may grant non-exclusive licences to third parties to exploit the jointly-owned results (without any right to sub-license), if the other joint owners are given:

- at least 45 days advance notice and
- fair and reasonable compensation.

The joint owners may agree — in writing — to apply another regime than joint ownership.

If third parties (including employees and other personnel) may claim rights to the results, the beneficiary concerned must ensure that those rights can be exercised in a manner compatible with its obligations under the Agreement.

The beneficiaries must indicate the owner(s) of the results (results ownership list) in the final periodic report.

### **Protection of results**

Beneficiaries which have received funding under the grant must adequately protect their results — for an appropriate period and with appropriate territorial coverage — if protection is possible and justified, taking into account all relevant considerations, including the prospects for commercial exploitation, the legitimate interests of the other beneficiaries and any other legitimate interests.

### **Exploitation of results**

Beneficiaries which have received funding under the grant must — up to four years after the end of the action (see Data Sheet, Point 1) — use their best efforts to exploit their results directly or to have them exploited indirectly by another entity, in particular through transfer or licensing.

If, despite a beneficiary's best efforts, the results are not exploited within one year after the end of the action, the beneficiaries must (unless otherwise agreed in writing with the granting authority) use the Horizon Results Platform to find interested parties to exploit the results.

If results are incorporated in a standard, the beneficiaries must (unless otherwise agreed with the granting authority or unless it is impossible) ask the standardisation body to include the funding statement (see Article 17) in (information related to) the standard.

### **Additional exploitation obligations**

Where the call conditions impose additional exploitation obligations (including obligations linked to the restriction of participation or control due to strategic assets, interests, autonomy or security reasons), the beneficiaries must comply with them — up to four years after the end of the action (see Data Sheet, Point 1).

Where the call conditions impose additional exploitation obligations in case of a public emergency, the beneficiaries must (if requested by the granting authority) grant for a limited period of time specified in the request, non-exclusive licences — under fair and reasonable conditions — to their results to legal entities that need the results to address the public emergency and commit to rapidly and broadly exploit the resulting products and services at fair and reasonable conditions. This provision applies up to four years after the end of the action (see Data Sheet, Point 1).

### Additional information obligation relating to standards

Where the call conditions impose additional information obligations relating to possible standardisation, the beneficiaries must — up to four years after the end of the action (see Data Sheet, Point 1) — inform the granting authority, if the results could reasonably be expected to contribute to European or international standards.

## **Transfer and licensing of results**

### Transfer of ownership

The beneficiaries may transfer ownership of their results, provided this does not affect compliance with their obligations under the Agreement.

The beneficiaries must ensure that their obligations under the Agreement regarding their results are passed on to the new owner and that this new owner has the obligation to pass them on in any subsequent transfer.

Moreover, they must inform the other beneficiaries with access rights of the transfer at least 45 days in advance (or less if agreed in writing), unless agreed otherwise in writing for specifically identified third parties including affiliated entities or unless impossible under the applicable law. This notification must include sufficient information on the new owner to enable the beneficiaries concerned to assess the effects on their access rights. The beneficiaries may object within 30 days of receiving notification (or less if agreed in writing), if they can show that the transfer would adversely affect their access rights. In this case, the transfer may not take place until agreement has been reached between the beneficiaries concerned.

### Granting licences

The beneficiaries may grant licences to their results (or otherwise give the right to exploit them), including on an exclusive basis, provided this does not affect compliance with their obligations.

Exclusive licences for results may be granted only if all the other beneficiaries concerned have waived their access rights.

### Granting authority right to object to transfers or licensing — Horizon Europe actions

Where the call conditions in Horizon Europe actions provide for the right to object to transfers or licensing, the granting authority may — up to four years after the end of the action (see Data Sheet, Point 1) — object to a transfer of ownership or the exclusive licensing of results, if:

- the beneficiaries which generated the results have received funding under the grant
- it is to a legal entity established in a non-EU country not associated with Horizon Europe, and
- the granting authority considers that the transfer or licence is not in line with EU interests.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority before the intended transfer or licensing takes place and:

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- identify the specific results concerned
- describe in detail the new owner or licensee and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or licence on EU interests, in particular regarding competitiveness as well as consistency with ethical principles and security considerations.

The granting authority may request additional information.

If the granting authority decides to object to a transfer or exclusive licence, it must formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information it has requested).

No transfer or licensing may take place in the following cases:

- pending the granting authority decision, within the period set out above
- if the granting authority objects
- until the conditions are complied with, if the granting authority objection comes with conditions.

A beneficiary may formally notify a request to waive the right to object regarding intended transfers or grants to a specifically identified third party, if measures safeguarding EU interests are in place. If the granting authority agrees, it will formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information requested).

*Granting authority right to object to transfers or licensing — Euratom actions*

Where the call conditions in Euratom actions provide for the right to object to transfers or licensing, the granting authority may — up to four years after the end of the action (see Data Sheet, Point 1) — object to a transfer of ownership or the exclusive or non-exclusive licensing of results, if:

- the beneficiaries which generated the results have received funding under the grant
- it is to a legal entity established in a non-EU country not associated to the Euratom Research and Training Programme 2021-2025 and
- the granting authority considers that the transfer or licence is not in line with the EU interests.

Beneficiaries that intend to transfer ownership or grant a licence must formally notify the granting authority before the intended transfer or licensing takes place and:

- identify the specific results concerned
- describe in detail the results, the new owner or licensee and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or licence on EU interests, in particular regarding competitiveness as well as consistency with

ethical principles and security considerations (including the defence interests of the EU Member States under Article 24 of the Euratom Treaty).

The granting authority may request additional information.

If the granting authority decides to object to a transfer or licence, it will formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information requested).

No transfer or licensing may take place in the following cases:

- pending the granting authority decision, within the period set out above
- if the granting authority objects
- until the conditions are complied with, if the granting authority objection comes with conditions.

A beneficiary may formally notify a request to waive the right to object regarding intended transfers or grants to a specifically identified third party, if measures safeguarding EU interests are in place. If the granting authority agrees, it will formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information requested).

*Limitations to transfers and licensing due to strategic assets, interests, autonomy or security reasons of the EU and its Member States*

Where the call conditions restrict participation or control due to strategic assets, interests, autonomy or security reasons, the beneficiaries may not transfer ownership of their results or grant licences to third parties which are established in countries which are not eligible countries or target countries set out in the call conditions (or, if applicable, are controlled by such countries or entities from such countries) — unless they have requested and received prior approval by the granting authority.

The request must:

- identify the specific results concerned
- describe in detail the new owner and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or license on the strategic assets, interests, autonomy or security of the EU and its Member States.

The granting authority may request additional information.

**Access rights to results and background**

*Exercise of access rights — Waiving of access rights — No sub-licensing*

Requests to exercise access rights and the waiver of access rights must be in writing.

Unless agreed otherwise in writing with the beneficiary granting access, access rights do not include the right to sub-license.

If a beneficiary is no longer involved in the action, this does not affect its obligations to grant access.

If a beneficiary defaults on its obligations, the beneficiaries may agree that that beneficiary no longer has access rights.

Access rights for implementing the action

The beneficiaries must grant each other access — on a royalty-free basis — to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has — before acceding to the Agreement —:

- informed the other beneficiaries that access to its background is subject to restrictions, or
- agreed with the other beneficiaries that access would not be on a royalty-free basis.

The beneficiaries must grant each other access — on a royalty-free basis — to results needed for implementing their own tasks under the action.

Access rights for exploiting the results

The beneficiaries must grant each other access — under fair and reasonable conditions — to results needed for exploiting their results.

The beneficiaries must grant each other access — under fair and reasonable conditions — to background needed for exploiting their results, unless the beneficiary that holds the background has — before acceding to the Agreement — informed the other beneficiaries that access to its background is subject to restrictions.

Requests for access must be made — unless agreed otherwise in writing — up to one year after the end of the action (see Data Sheet, Point 1).

Access rights for entities under the same control

Unless agreed otherwise in writing by the beneficiaries, access to results and, subject to the restrictions referred to above (if any), background must also be granted — under fair and reasonable conditions — to entities that:

- are established in an EU Member State or Horizon Europe associated country
- are under the direct or indirect control of another beneficiary, or under the same direct or indirect control as that beneficiary, or directly or indirectly controlling that beneficiary and
- need the access to exploit the results of that beneficiary.

Unless agreed otherwise in writing, such requests for access must be made by the entity directly to the beneficiary concerned.

Requests for access must be made — unless agreed otherwise in writing — up to one year after the end of the action (see Data Sheet, Point 1).

Access rights for the granting authority, EU institutions, bodies, offices or agencies and national authorities to results for policy purposes — Horizon Europe actions

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In Horizon Europe actions, the beneficiaries which have received funding under the grant must grant access to their results — on a royalty-free basis — to the granting authority, EU institutions, bodies, offices or agencies for developing, implementing and monitoring EU policies or programmes. Such access rights do not extend to beneficiaries' background.

Such access rights are limited to non-commercial and non-competitive use.

For actions under the cluster 'Civil Security for Society', such access rights also extend to national authorities of EU Member States for developing, implementing and monitoring their policies or programmes in this area. In this case, access is subject to a bilateral agreement to define specific conditions ensuring that:

- the access rights will be used only for the intended purpose and
- appropriate confidentiality obligations are in place.

Moreover, the requesting national authority or EU institution, body, office or agency (including the granting authority) must inform all other national authorities of such a request.

*Access rights for the granting authority, Euratom institutions, funding bodies or the Joint Undertaking Fusion for Energy — Euratom actions*

In Euratom actions, the beneficiaries which have received funding under the grant must grant access to their results — on a royalty-free basis — to the granting authority, Euratom institutions, funding bodies or the Joint Undertaking Fusion for Energy for developing, implementing and monitoring Euratom policies and programmes or for compliance with obligations assumed through international cooperation with non-EU countries and international organisations.

Such access rights include the right to authorise third parties to use the results in public procurement and the right to sub-license and are limited to non-commercial and non-competitive use.

*Additional access rights*

Where the call conditions impose additional access rights, the beneficiaries must comply with them.

**COMMUNICATION, DISSEMINATION, OPEN SCIENCE AND VISIBILITY (— ARTICLE 17)**

**Dissemination**

*Dissemination of results*

The beneficiaries must disseminate their results as soon as feasible, in a publicly available format, subject to any restrictions due to the protection of intellectual property, security rules or legitimate interests.

A beneficiary that intends to disseminate its results must give at least 15 days advance notice to the other beneficiaries (unless agreed otherwise), together with sufficient information on the results it will disseminate.



Any other beneficiary may object within (unless agreed otherwise) 15 days of receiving notification, if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the results may not be disseminated unless appropriate steps are taken to safeguard those interests.

#### Additional dissemination obligations

Where the call conditions impose additional dissemination obligations, the beneficiaries must also comply with those.

### **Open Science**

#### Open science: open access to scientific publications

The beneficiaries must ensure open access to peer-reviewed scientific publications relating to their results. In particular, they must ensure that:

- at the latest at the time of publication, a machine-readable electronic copy of the published version or the final peer-reviewed manuscript accepted for publication, is deposited in a trusted repository for scientific publications
- immediate open access is provided to the deposited publication via the repository, under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights; for monographs and other long-text formats, the licence may exclude commercial uses and derivative works (e.g. CC BY-NC, CC BY-ND) and
- information is given via the repository about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication.

Beneficiaries (or authors) must retain sufficient intellectual property rights to comply with the open access requirements.

Metadata of deposited publications must be open under a Creative Common Public Domain Dedication (CC 0) or equivalent, in line with the FAIR principles (in particular machine-actionable) and provide information at least about the following: publication (author(s), title, date of publication, publication venue); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms; persistent identifiers for the publication, the authors involved in the action and, if possible, for their organisations and the grant. Where applicable, the metadata must include persistent identifiers for any research output or any other tools and instruments needed to validate the conclusions of the publication.

Only publication fees in full open access venues for peer-reviewed scientific publications are eligible for reimbursement.

#### Open science: research data management

The beneficiaries must manage the digital research data generated in the action ('data') responsibly, in line with the FAIR principles and by taking all of the following actions:

- establish a data management plan ('DMP') (and regularly update it)

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- as soon as possible and within the deadlines set out in the DMP, deposit the data in a trusted repository; if required in the call conditions, this repository must be federated in the EOSC in compliance with EOSC requirements
- as soon as possible and within the deadlines set out in the DMP, ensure open access — via the repository — to the deposited data, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC 0) or a licence with equivalent rights, following the principle ‘as open as possible as closed as necessary’, unless providing open access would in particular:
  - be against the beneficiary’s legitimate interests, including regarding commercial exploitation, or
  - be contrary to any other constraints, in particular the EU competitive interests or the beneficiary’s obligations under this Agreement; if open access is not provided (to some or all data), this must be justified in the DMP
- provide information via the repository about any research output or any other tools and instruments needed to re-use or validate the data.

Metadata of deposited data must be open under a Creative Commons Public Domain Dedication (CC 0) or equivalent (to the extent legitimate interests or constraints are safeguarded), in line with the FAIR principles (in particular machine-actionable) and provide information at least about the following: datasets (description, date of deposit, author(s), venue and embargo); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms; persistent identifiers for the dataset, the authors involved in the action, and, if possible, for their organisations and the grant. Where applicable, the metadata must include persistent identifiers for related publications and other research outputs.

#### Open science: additional practices

Where the call conditions impose additional obligations regarding open science practices, the beneficiaries must also comply with those.

Where the call conditions impose additional obligations regarding the validation of scientific publications, the beneficiaries must provide (digital or physical) access to data or other results needed for validation of the conclusions of scientific publications, to the extent that their legitimate interests or constraints are safeguarded (and unless they already provided the (open) access at publication).

Where the call conditions impose additional open science obligations in case of a public emergency, the beneficiaries must (if requested by the granting authority) immediately deposit any research output in a repository and provide open access to it under a CC BY licence, a Public Domain Dedication (CC 0) or equivalent. As an exception, if the access would be against the beneficiaries’ legitimate interests, the beneficiaries must grant non-exclusive licenses — under fair and reasonable conditions — to legal entities that need the research output to address the public emergency and commit to rapidly and broadly exploit the resulting products and services at fair and reasonable conditions. This provision applies up to four years after the end of the action (see Data Sheet, Point 1).

#### **Plan for the exploitation and dissemination of results including communication activities**

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Unless excluded by the call conditions, the beneficiaries must provide and regularly update a plan for the exploitation and dissemination of results including communication activities.

### **SPECIFIC RULES FOR CARRYING OUT THE ACTION (— ARTICLE 18)**

#### **Implementation in case of restrictions due to strategic assets, interests, autonomy or security of the EU and its Member States**

Where the call conditions restrict participation or control due to strategic assets, interests, autonomy or security, the beneficiaries must ensure that none of the entities that participate as affiliated entities, associated partners, subcontractors or recipients of financial support to third parties are established in countries which are not eligible countries or target countries set out in the call conditions (or, if applicable, are controlled by such countries or entities from such countries) — unless otherwise agreed with the granting authority.

The beneficiaries must moreover ensure that any cooperation with entities established in countries which are not eligible countries or target countries set out in the call conditions (or, if applicable, are controlled by such countries or entities from such countries) does not affect the strategic assets, interests, autonomy or security of the EU and its Member States.

#### **Recruitment and working conditions for researchers**

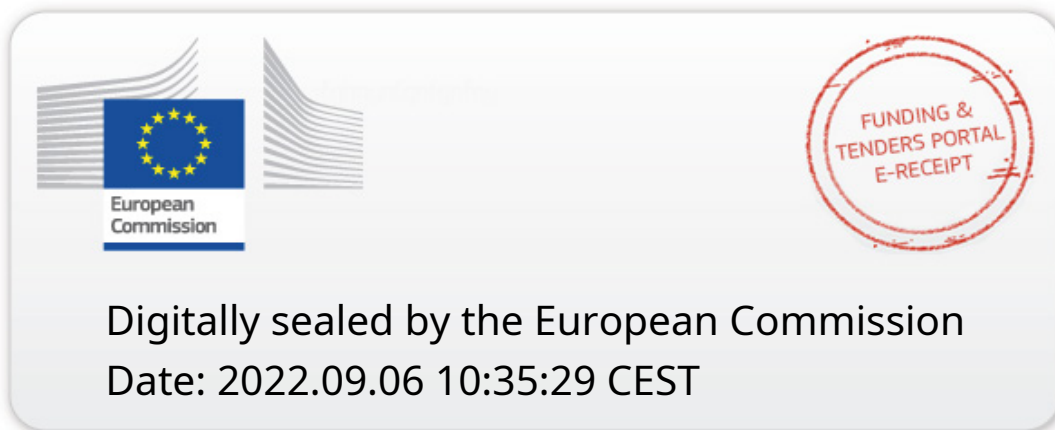
The beneficiaries must take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers<sup>3</sup>, in particular regarding:

- working conditions
- transparent recruitment processes based on merit, and
- career development.

The beneficiaries must ensure that researchers and all participants involved in the action are aware of them.

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<sup>3</sup> Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).



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## REGIONE EMILIA-ROMAGNA

DELIBERAZIONE DELLA GIUNTA REGIONALE 12 DICEMBRE 2022, N. 2185

**Approvazione del Piano d'Emergenza Diga (PED) della diga di Santa Maria del Taro (PR)**

LA GIUNTA DELLA REGIONE EMILIA-ROMAGNA

VISTI:

- il Decreto Legislativo 2 gennaio 2018, n. 1 “*Codice della protezione civile*” e ss.mm.ii.

- la Direttiva del Presidente del Consiglio dei ministri dell'8 luglio 2014 (G.U. n. 256 del 4/11/2014) “*Indirizzi operativi inerenti l'attività di protezione civile nell'ambito dei bacini in cui siano presenti grandi dighe*”;

- la Direttiva del Presidente del Consiglio dei Ministri del 27 febbraio 2015 (G.U. n. 75 del 31/3/2015) “*Indirizzi operativi inerenti la predisposizione della parte dei piani di gestione relativa al sistema di allertamento nazionale, statale e regionale, per il rischio idraulico ai fini di protezione civile di cui al decreto legislativo 23 febbraio 2010, n. 49 di recepimento della Direttiva 2007/60/CE*” e ss.mm.ii.;

- la Direttiva del Presidente del Consiglio dei Ministri del 30 aprile 2021 (G.U. n.160 del 6/7/2021) recante “*Indirizzi di predisposizione dei piani di Protezione civile*”;

- la Legge Regionale 7 febbraio 2005, n. 1 “*Norme in materia di protezione civile e volontariato. Istituzione dell'Agenda regionale di protezione civile*” e ss.mm.ii., per quanto applicabile;

- la Legge Regionale 30 luglio 2015, n. 13 “*Riforma del sistema di governo regionale e locale e disposizioni su Città metropolitana di Bologna, Province, Comuni e loro Unioni*” e ss.mm.ii., con la quale, in coerenza con il dettato della Legge 7 aprile 2014, n. 56 “*Disposizioni sulle Città metropolitane, sulle Province, sulle Unioni e fusioni di Comuni*”, è stato riformato il sistema di governo territoriale a cominciare dalla ridefinizione del nuovo ruolo istituzionale della Regione e, quindi, anche dell'Agenda Regionale di Protezione Civile (artt. 19 e 68), quest'ultima ridenominata “*Agenda regionale per la Sicurezza territoriale e la Protezione civile*” (d'ora in avanti, per brevità, “*Agenda*”);

DATO ATTO CHE:

- la Direttiva del Presidente del Consiglio dei Ministri dell'8 luglio 2014, sopra menzionata, prevede che:

- la Regione, in raccordo con le Prefetture-UTG territorialmente interessate, relativamente alla pianificazione e gestione delle emergenze delle grandi dighe, predisponga e approvi un Piano di emergenza regionale (PED), per contrastare le situazioni di pericolo connesse con la propagazione di un'onda di piena originata da manovre degli organi di scarico (rischio idraulico a valle) ovvero dall'ipotetico collasso dello sbarramento (rischio diga);

- il Documento di protezione civile concorre a costituire il quadro di riferimento per la redazione del Piano di Emergenza Diga (PED) relativo ai territori che possono essere interessati dagli effetti derivanti dalla presenza della stessa;

- i PED sono parte integrante della pianificazione provinciale e, ove predisposta, della pianificazione regionale (articolo 1bis DL 59/2012 convertito in L 100/2012)

- i Comuni, i cui territori possono essere interessati da un'onda di piena originata da manovre degli organi di scarico ovvero dall'ipotetico collasso dello sbarramento, devono prevedere nel

proprio Piano di emergenza comunale o intercomunale una sezione dedicata a specifiche misure organizzata per fasi di allertamento ed operative, congrue con quelle dei PED;

PREMESSO che:

- con nota 22335 del 3/11/2015 il Ministero delle Infrastrutture e dei Trasporti – Dipartimento per le infrastrutture, i sistemi informatici e statistici – Direzione generale per le dighe e le infrastrutture idriche ed elettriche ha trasmesso al Dipartimento della Protezione Civile la richiesta alla Commissione speciale di protezione civile di comunicare alle protezioni civili regionali di promuovere e coordinare, per i territori di competenza, le attività di competenza regionale di cui al punto 2.4 della predetta Direttiva del P.C.M. dell'8/7/2014;

- con nota 24642 del 2/12/2015 il Ministero delle Infrastrutture e dei Trasporti – Direzione Generale per le Dighe e le infrastrutture idriche ed elettriche – Ufficio Tecnico per le dighe di Milano, acquisita agli atti dell'Agenda con prot. PC/2015/0013502 del 3/12/2015 ha richiesto a quest'ultima di promuovere e coordinare le attività di competenza regionale;

- con nota PC.2017.0047906 del 30/10/2017 l'Agenda, in seguito al lavoro svolto dal tavolo tecnico di coordinamento per le attività di aggiornamento dei Documenti di Protezione Civile, ha definito per le dighe di Santa Maria del Taro, di Ozola, di Fontanaluccia, di Ridracoli e di Conca:

- l'Autorità idraulica di riferimento per l'asta fluviale a valle della diga;

- la portata massima transitabile a valle della diga;

- la soglia di attenzione scarico diga e la soglia incrementale;

- l'U.T. Sicurezza Territoriale e Protezione Civile di Parma dell'Agenda (ex Servizio Area Affluenti Po) con riferimento ai parametri QAmx, Qmin, ΔQ di cui alla Direttiva del P.C.M. del 8/7/2014, con note prot. PC/2017/31260 del 13/7/2017 e prot. PC/2017/44473 del 12/10/2017, ha trasmesso i valori concordati in sede di Tavolo Tecnico;

- con Decreto Prefettizio della Prefettura - U.T.G. di Parma n. 66150 del 20 ottobre 2022 è stato approvato il Documento di Protezione Civile della Diga di Santa Maria del Taro;

- l'U.T. Sicurezza territoriale e Protezione Civile di Parma, in seguito alla suddetta approvazione del Documento di Protezione Civile della diga di Santa Maria del Taro e in attuazione della Direttiva del P.C.M. del 8/7/2014, con nota prot. 31/10/2022.0057584.U del 31/10/2022, ha convocato un incontro per la condivisione di una bozza del Piano di Emergenza della Diga di Santa Maria del Taro con tutti i soggetti interessati;

- contestualmente, in allegato alla suddetta nota di convocazione prot. 31/10/2022.0057584.U del 31/10/2022, l'U.T. Sicurezza territoriale e Protezione Civile Parma, ha trasmesso a tutti i soggetti interessati la bozza del Piano di Emergenza della Diga di Santa Maria del Taro ed i relativi allegati, al fine di consentire a questi ultimi di formulare eventuali osservazioni, proposte di modifica e la validazione dei dati contenuti;

- l'U.T. Sicurezza Territoriale e Protezione Civile Parma, con nota prot. 10/11/2022.0060195.U del 10/11/2022, ha trasmesso la versione definitiva del Piano di Emergenza della Diga di Santa Maria del Taro, che recepisce le modifiche concordate con i partecipanti all'incontro convocato con la suddetta nota prot. 31/10/2022.0057584.U del 31/10/2022;

- contestualmente, con la medesima nota prot. 10/11/2022.0060195.U del 10/11/2022, l'U.T. Sicurezza territoriale e Pro-

tezione Civile Parma ha chiesto agli Enti e strutture operative interessate la trasmissione di eventuali ulteriori osservazioni entro la data del 18/11/2022, specificando che, in caso non fossero state inviate ulteriori osservazioni entro tale data, si sarebbe considerato il documento come definitivo e si sarebbe proceduto ad avviare l'iter di approvazione;

- entro la data fissata del 18/11/2022 non sono pervenute osservazioni da parte dei soggetti interessati;

- con la stessa nota prot. 10/11/2022.0060195.U del 10/11/2022 l'U.T. Sicurezza territoriale e Protezione civile Parma, ha trasmesso il Piano di Emergenza della Diga di Santa Maria del Taro alla Prefettura – U.T.G. di Parma ai fini del raccordo;

- la Prefettura – U.T.G. di Parma con nota prot. Uscita n. 72136 del 16/11/2022, acquisita agli atti dell'Agenzia con prot. 16/11/2022.0061343.E del 16/11/2022, ha espresso parere favorevole al Piano di Emergenza della Diga di Santa Maria del Taro ai fini del raccordo;

VALUTATO di poter procedere con l'approvazione del Piano di Emergenza della Diga di Santa Maria del Taro e dei relativi allegati;

#### RICHIAMATE:

- la Legge Regionale 15 novembre 2001, n. 40 "Ordinamento contabile della Regione Emilia-Romagna, abrogazione delle L.R. 6 luglio 1977, n. 31 e 27 marzo 1972, n. 4", per quanto applicabile;

- la L.R. 26 novembre 2001, n. 43, "Testo unico in materia di organizzazione e di rapporti di lavori nella Regione Emilia-Romagna";

- la D.G.R. n. 468 del 10 aprile 2017 "Il sistema dei controlli interni nella Regione Emilia-Romagna", unitamente alle relative circolari del Capo di Gabinetto del Presidente della Giunta regionale PG/2017/660476 del 13/10/2017 e PG/2017/779385 del 21/12/2017, concernenti indicazioni procedurali per rendere operativo il sistema dei controlli interni;

- la determinazione dirigenziale n. 700 del 28 febbraio 2018 dell'Agenzia regionale per la Sicurezza territoriale e la Protezione civile "Recepimento della deliberazione di Giunta regionale n. 468/2017 recante "Il sistema dei controlli interni nella Regione Emilia-Romagna";

- la determinazione dirigenziale 2657 del 1 settembre 2020 dell'Agenzia regionale per la sicurezza territoriale e la Protezione civile "Adozione sistema controlli interni all'Agenzia in attuazione della DGR 468/2017 e della D.D. 700/2018";

- la D.G.R. n. 2013 del 28 dicembre 2020 "Indirizzi organizzativi per il consolidamento e il potenziamento delle capacità amministrative dell'ente per il conseguimento degli obiettivi del programma di mandato, per fare fronte alla programmazione comunitaria 2021/2027 e primo adeguamento delle strutture regionali conseguenti alla soppressione dell'IBACN";

- la determinazione del Direttore dell'Agenzia n. 4359 del 25/11/2021 "Adozione relazione gestionale 2021 sulle attività svolte e piano delle attività per il triennio 2022-2024 dell'agenzia regionale per la sicurezza territoriale e la protezione civile";

- la D.G.R. n. 324 del 7 marzo 2022: "Disciplina organica in materia di organizzazione dell'Ente e gestione del personale";

- la D.G.R. n. 325 del 7 marzo 2022: "Consolidamento e rafforzamento delle capacità amministrative: riorganizzazione

dell'Ente a seguito del nuovo modello di organizzazione e gestione del personale";

- la D.G.R. 21 marzo 2022, n. 426 "Riorganizzazione dell'ente a seguito del nuovo modello di organizzazione e gestione del personale. Conferimento degli incarichi ai Direttori Generali e ai Direttori di Agenzia";

- la determinazione del Direttore dell'Agenzia n. 1049 del 25/3/2022 "Riorganizzazione dell'Agenzia regionale per la sicurezza territoriale e la protezione civile a seguito del nuovo modello organizzativo e gestione del personale. Conferimento incarichi dirigenziali e proroga delle posizioni organizzative";

- la D.G.R. n. 1615 del 28 settembre 2022 "Modifica e assetto degli assetti organizzativi di alcune direzioni generali/agenzie della giunta regionale";

#### VISTI infine:

- il D.lgs. n. 33 del 14 marzo 2013 "Riordino della disciplina riguardante gli obblighi di pubblicità, trasparenza e diffusione di informazioni da parte delle pubbliche amministrazioni" come modificato dal D.Lgs. n. 97/2016;

- la D.G.R. n. 111 del 31 gennaio 2022: "Piano triennale di prevenzione della corruzione e trasparenza 2022-2024, di transizione al piano integrato di attività e organizzazione di cui all'art. 6 del d.l. n. 80/2021;

- la determinazione dirigenziale n. 2335 del 9/2/2022 che ha approvato la "Direttiva di indirizzi interpretativi degli obblighi di pubblicazione previsti dal decreto legislativo n.33 del 2013. Anno 2022";

DATO ATTO che il responsabile del procedimento ha dichiarato di non trovarsi in situazione di conflitto, anche potenziale, di interessi;

#### DATO ATTO dei pareri allegati;

Su proposta del Vicepresidente Assessore alla Transizione Ecologica, contrasto al cambiamento climatico, Ambiente, Difesa del suolo e della costa, protezione civile;

A voti unanimi e palesi;

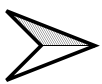
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1. di approvare il Piano di Emergenza Diga (PED) della diga di Santa Maria del Taro, allegato quale parte integrante e sostanziale del presente atto;
2. di trasmettere il testo integrale del presente atto ai soggetti destinatari delle comunicazioni di cui al paragrafo 4.2 dell'allegato Piano di Emergenza Diga (PED) della diga di Santa Maria del Taro;
3. di autorizzare il Direttore dell'Agenzia regionale per la Sicurezza territoriale e la Protezione civile ad apportare, con proprio provvedimento, le eventuali modifiche ritenute necessarie e/o opportune al contenuto degli Allegati del Piano di Emergenza Diga (PED) della diga di Santa Maria del Taro, dandone idonea e tempestiva diffusione ai soggetti interessati;
4. di pubblicare integralmente la presente deliberazione, e il relativo Allegato, nel Bollettino Ufficiale della Regione Emilia-Romagna Telematico e di provvedere alle ulteriori pubblicazioni ai sensi dell'art. 7-bis, comma 3 del D.lgs. n. 33/2013.

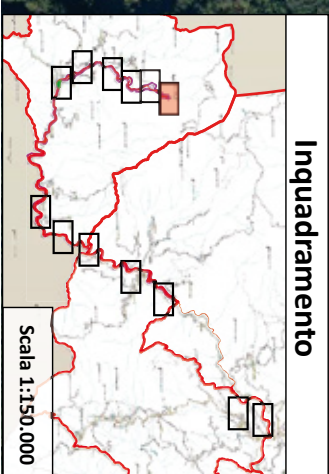




# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



Carta di dettaglio 1/13



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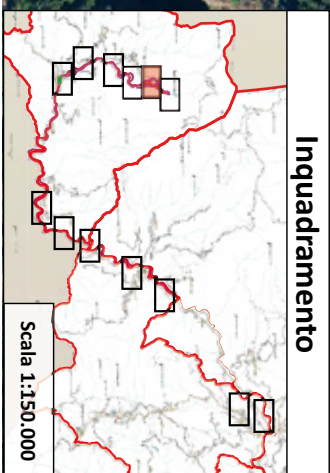




# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



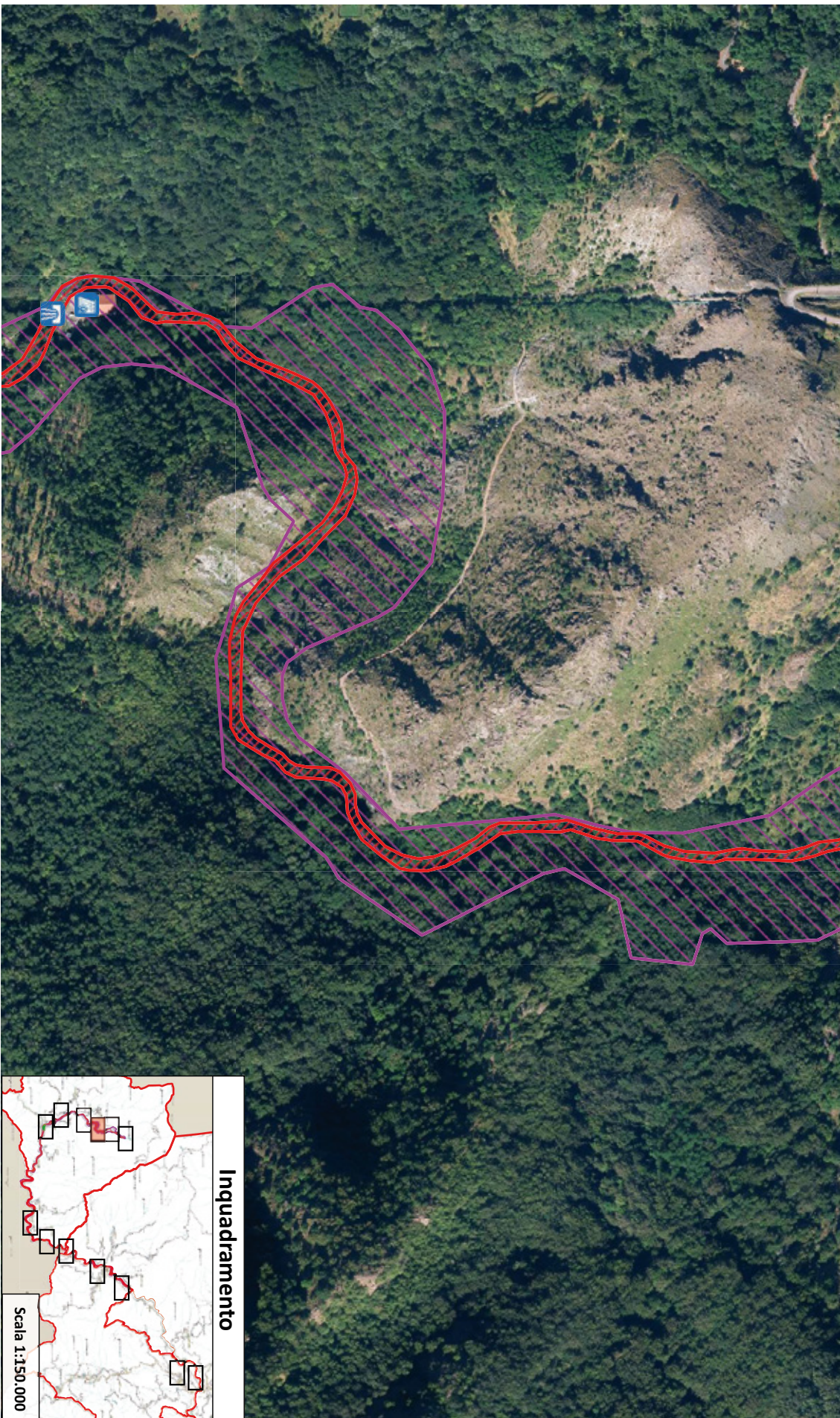
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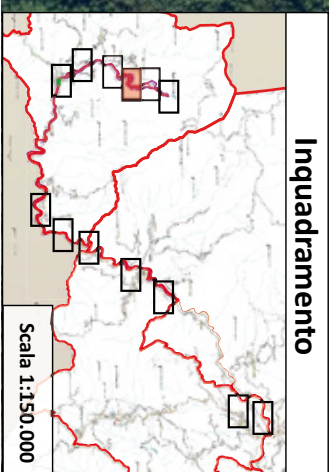
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# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



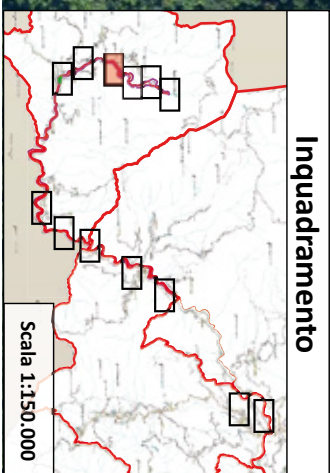
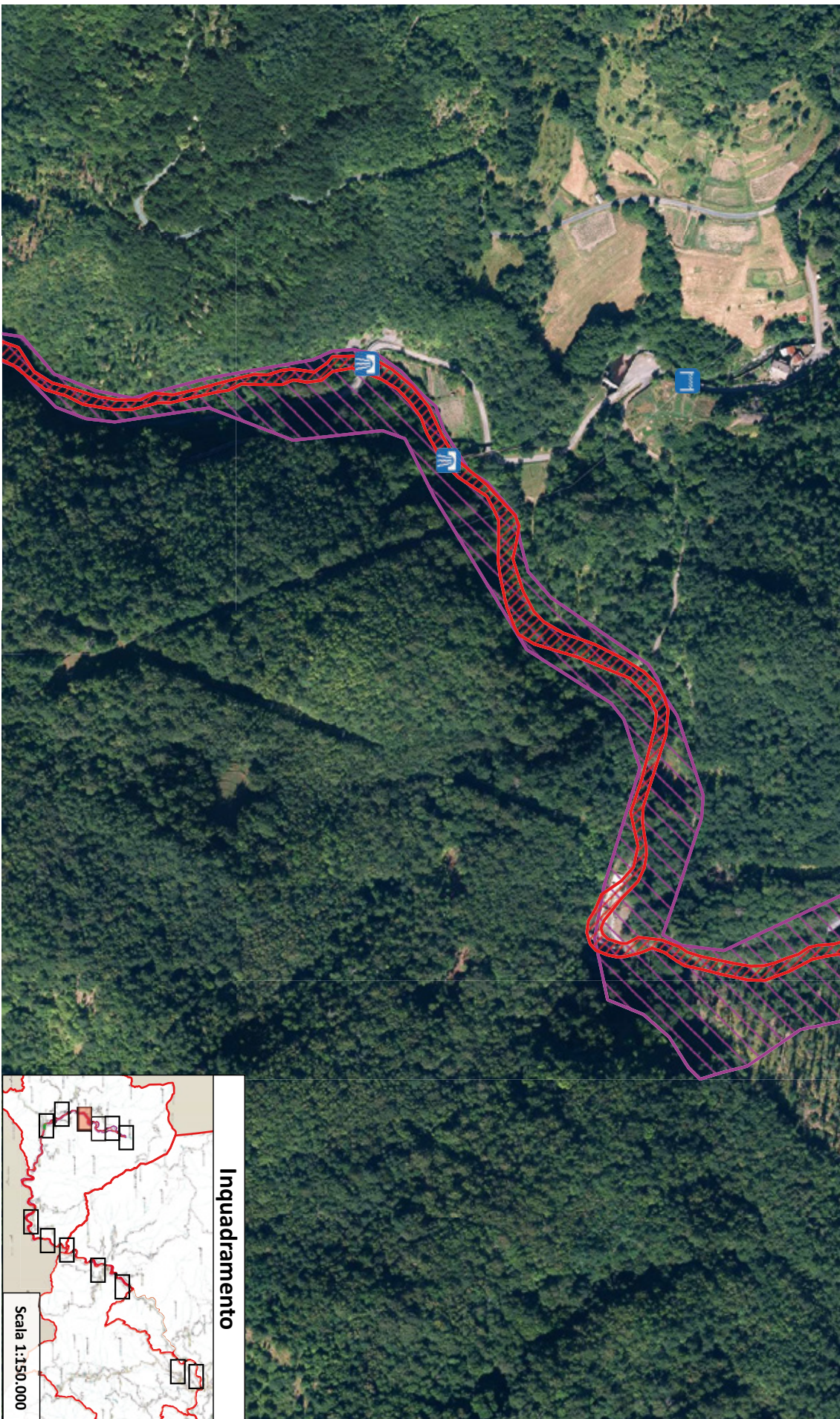
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# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



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## Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



Carta di dettaglio 5/13

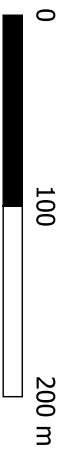
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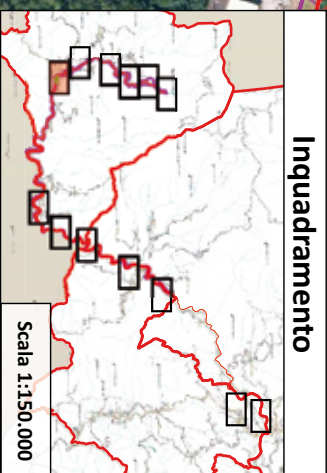


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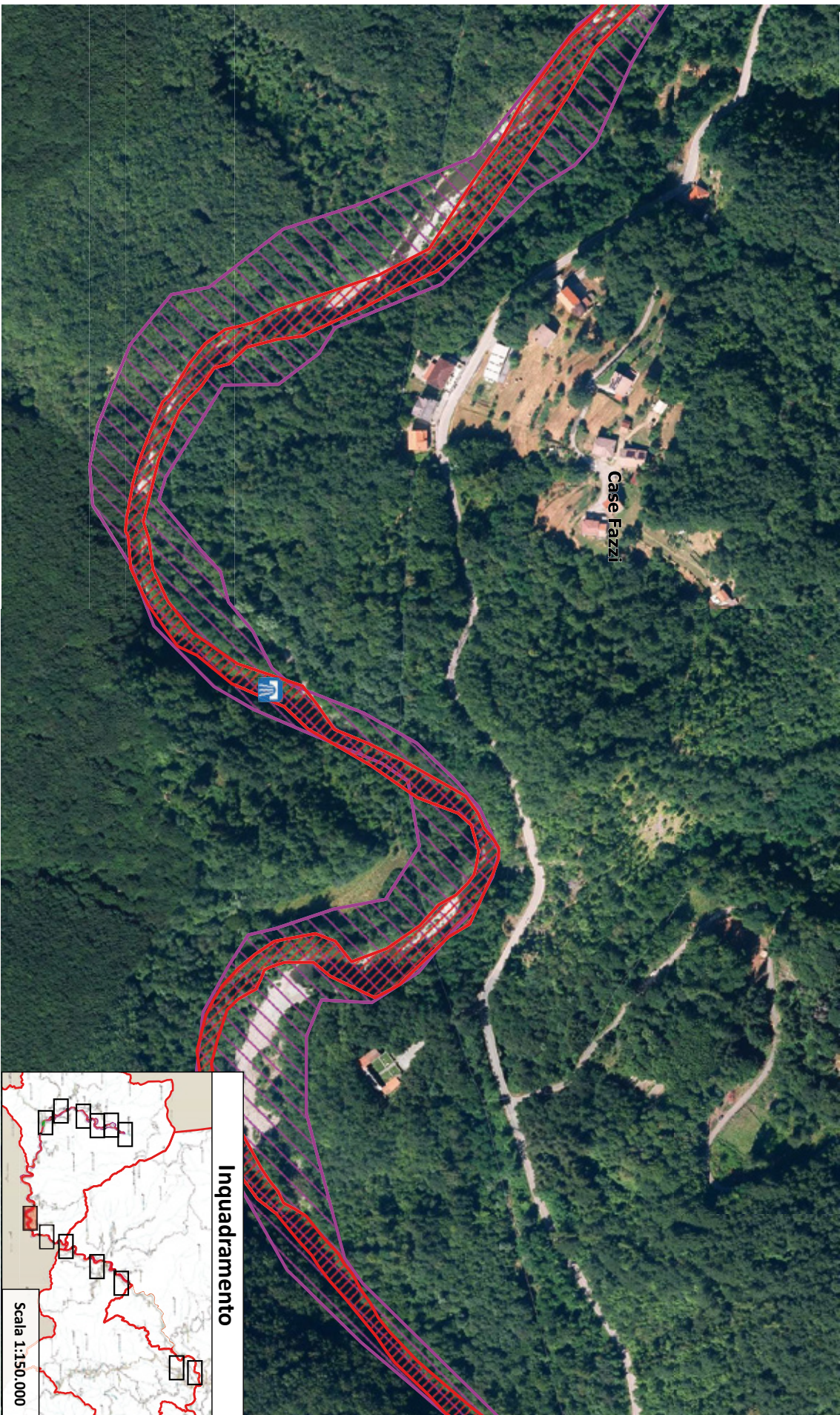
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# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro

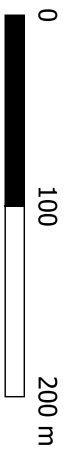
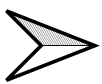
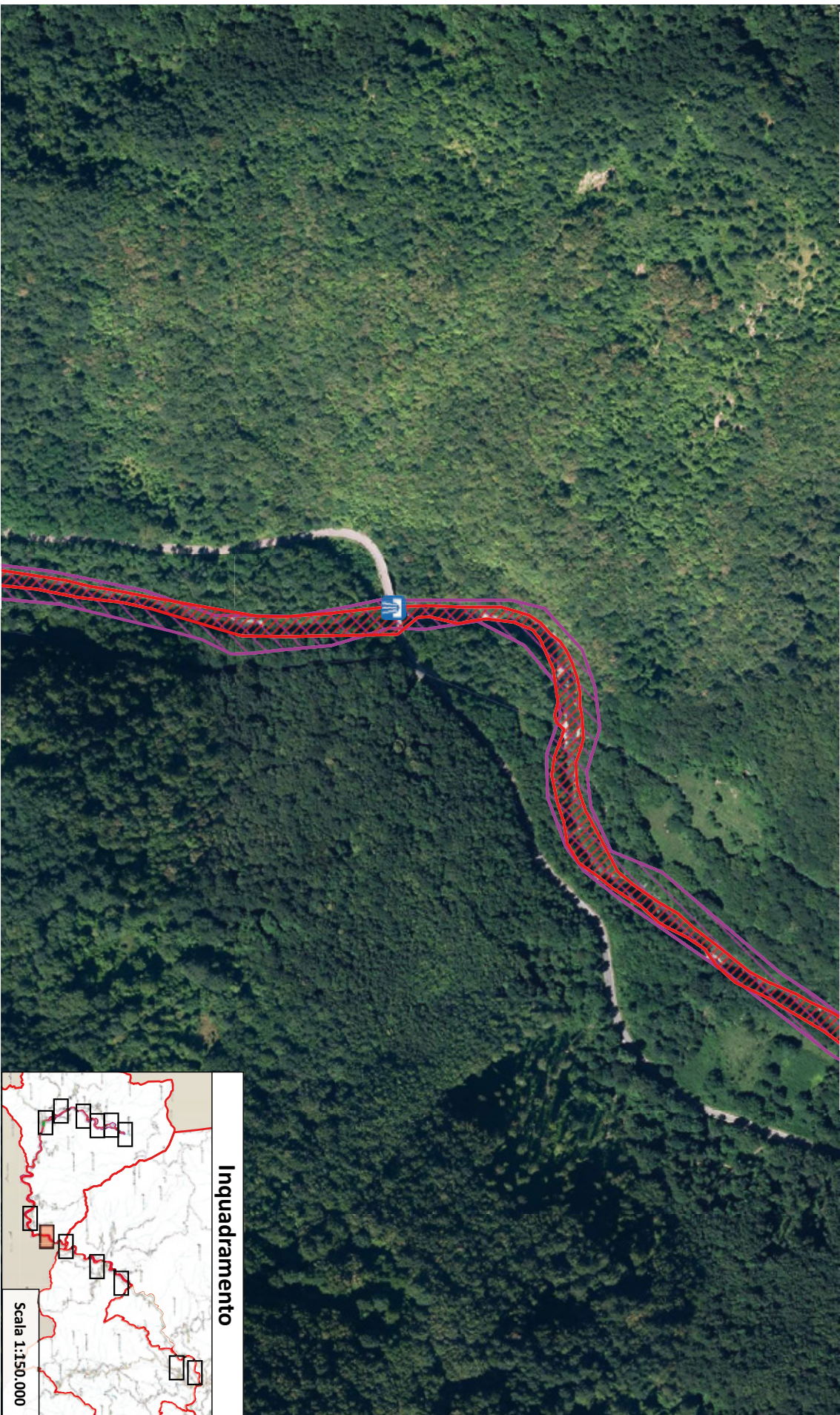


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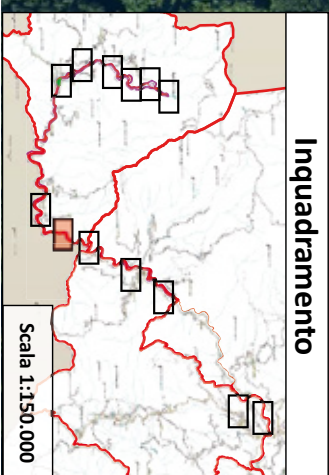
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# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



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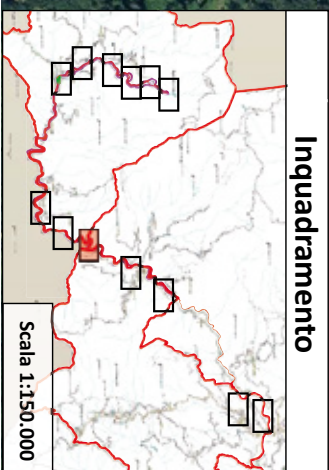


# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



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# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



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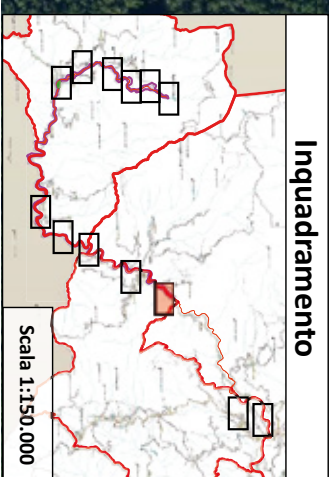
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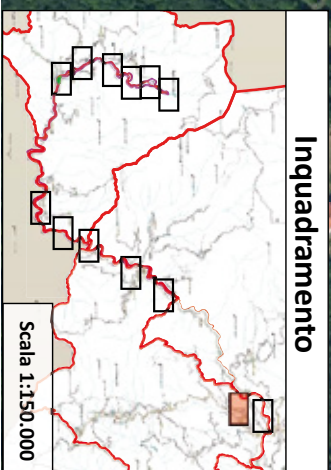
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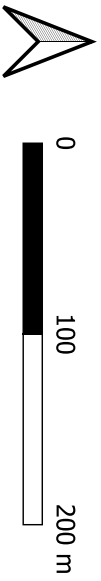
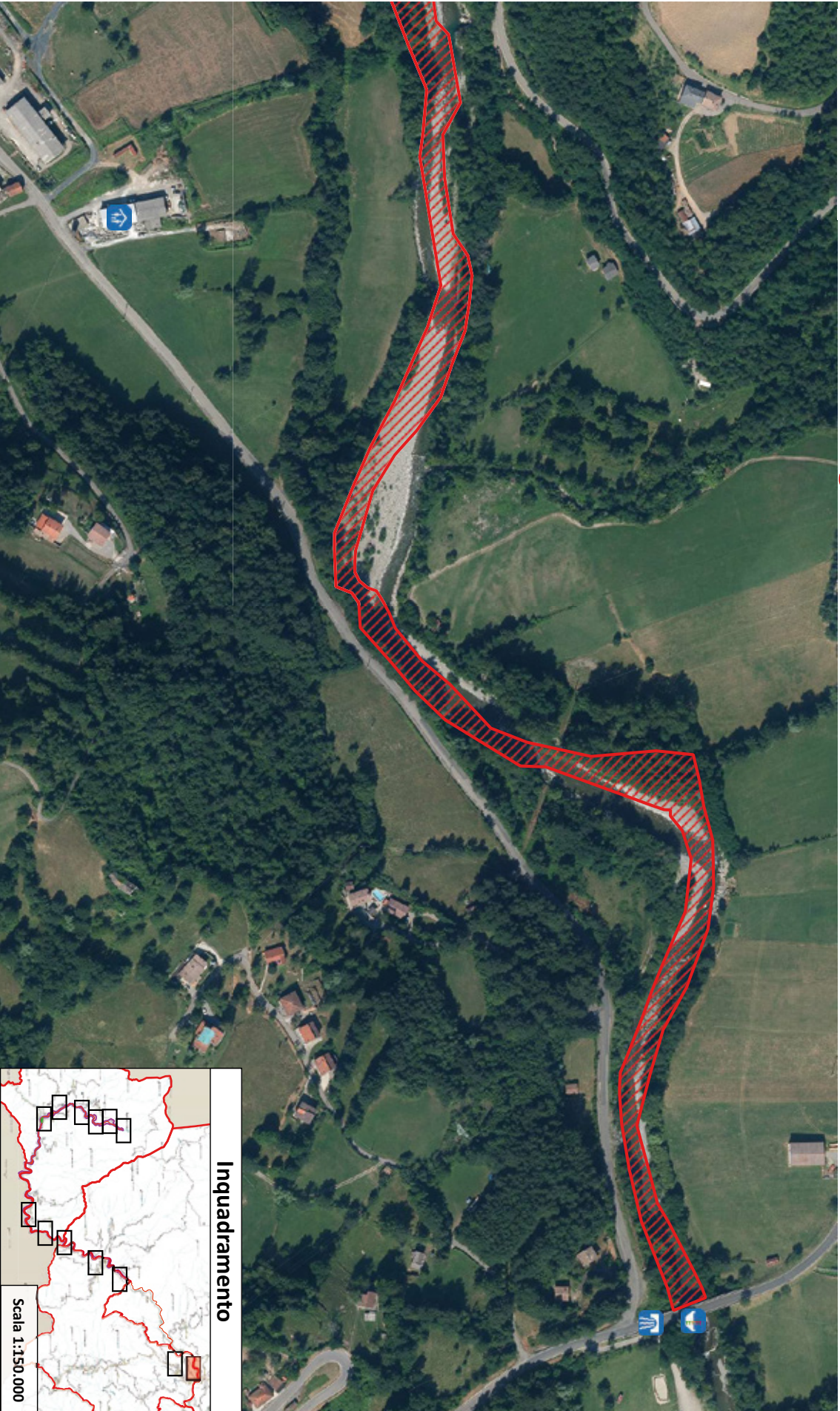


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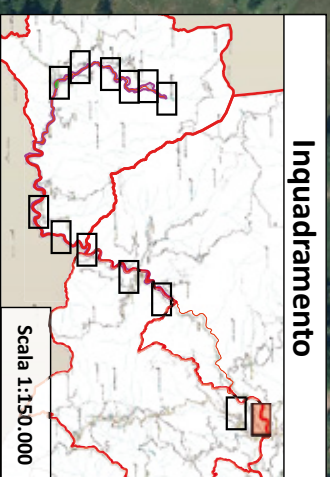
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# Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



Carta di dettaglio 13/13




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## Piano di Emergenza Dighe (PED) Diga di S. Maria del Taro



### Legenda

	Ambulatorio Croce Verde
	Edificio di culto
	Aree di Attesa
	Zona di atterraggio di emergenza
	Poste
	Aree di Ammassamento e Assistenza
	COC - Centri Coordinamento Comunali
	Centri di assistenza
	Farmacia
	Aree di Ammassamento Soccorritori Risorse
	Idrometri
	Pluviometri
	Dighe
	Cancelli
	Stazione Carabinieri
	Centrale idroelettrica Strinabecco
	Ponti
	Area di evacuazione cautelativa
	Scenario massima apertura scarichi
	Scenario collasso diga

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# **PIANO DI EMERGENZA DIGA DI SANTA MARIA DEL TARO**

Anno redazione Piano 2022

Atto di approvazione Delibera di Giunta Regionale n. **xxx** data **dd/mm/aaaa**

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## SIGLE E ACRONIMI

Agenzia/ARSTePC = Agenzia regionale per la sicurezza territoriale e la protezione civile della Regione Emilia-Romagna - Settore Coordinamento tecnico sicurezza territoriale e protezione civile Emilia

COR = Centro Operativo Regionale - Agenzia regionale per la sicurezza territoriale e la protezione civile della Regione Emilia-Romagna

USTPC – Parma = Ufficio territoriale Sicurezza Territoriale e Protezione Civile di Parma

ARPAE-SIMC CF = Agenzia regionale per la prevenzione, l'ambiente e l'energia della Regione Emilia-Romagna - Servizio Idro-Meteo-Clima - Centro Funzionale

AIPO = Agenzia Interregionale per il Fiume Po

Prefettura - UTG = Prefettura - Ufficio Territoriale del Governo

DG Dighe = Direzione Generale per le dighe e le infrastrutture idriche ed elettriche (Ministero delle Infrastrutture e dei Trasporti)

UTD = Ufficio Tecnico per le Dighe della Direzione Generale per le dighe e le infrastrutture idriche ed elettriche (Ministero delle Infrastrutture e dei Trasporti)

F.C.E.M. = Foglio Condizioni di Esercizio e Manutenzione

DPC = Documento di Protezione Civile

PED = Piano di Emergenza Diga

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## 1. PREMESSA

Tra gli “Indirizzi operativi inerenti all’attività di protezione civile nell’ambito dei bacini in cui siano presenti grandi dighe”, emanati con direttiva del Presidente del Consiglio dei Ministri del 8 luglio 2014, vi è la predisposizione e l’approvazione, da parte di ciascuna regione, in raccordo con le Prefetture - UTG territorialmente interessate, di un piano di emergenza su base regionale (denominato PED) per ciascuna grande diga.

Il presente piano viene elaborato tenendo in considerazione quanto previsto nel Documento di Protezione Civile della Diga, approvato dalla Prefettura - UTG di Parma con Decreto Prefettizio n. 66150 del 20/10/2022. Il PED resta valido anche in caso di successive revisioni al DPC tali da non renderne necessario l’aggiornamento.

Il presente piano, in accordo con tali indirizzi, è finalizzato a contrastare le situazioni di pericolo connesse con la propagazione di un’onda di piena originata da manovre degli organi di scarico ovvero dall’ipotetico collasso della Diga di Santa Maria del Taro, la quale, per altezza d’invaso dello sbarramento, risponde ai requisiti di “grande diga”<sup>1</sup>.

Esso riporta:

- gli scenari riguardanti le aree potenzialmente interessate dall’onda di piena, originata sia da manovre degli organi di scarico sia dal collasso della diga;
- le strategie operative per fronteggiare una situazione di emergenza, mediante l’allertamento, l’allarme, le misure di salvaguardia anche preventive, l’assistenza ed il soccorso della popolazione;
- il modello di intervento, che definisce il sistema di coordinamento con l’individuazione dei soggetti interessati e l’organizzazione dei centri operativi.

Ai sensi della Direttiva PCM 8 luglio 2014 (paragrafo 4), i comuni i cui territori possono essere interessati da un’onda di piena originata da manovre degli organi di scarico ovvero dall’ipotetico collasso della diga prevedono nel proprio piano di emergenza comunale o di ambito, di cui agli artt. 12 e 18 del D.Lgs. 2 gennaio 2018, n. 1 “Codice della Protezione Civile”, una sezione dedicata alle specifiche misure di allertamento, diramazione dell’allarme, informazione, primo soccorso e assistenza alla popolazione esposta al pericolo derivante dalla propagazione della citata onda di piena, organizzate per fasi di allertamento ed operative, congrue con quelle del presente PED.

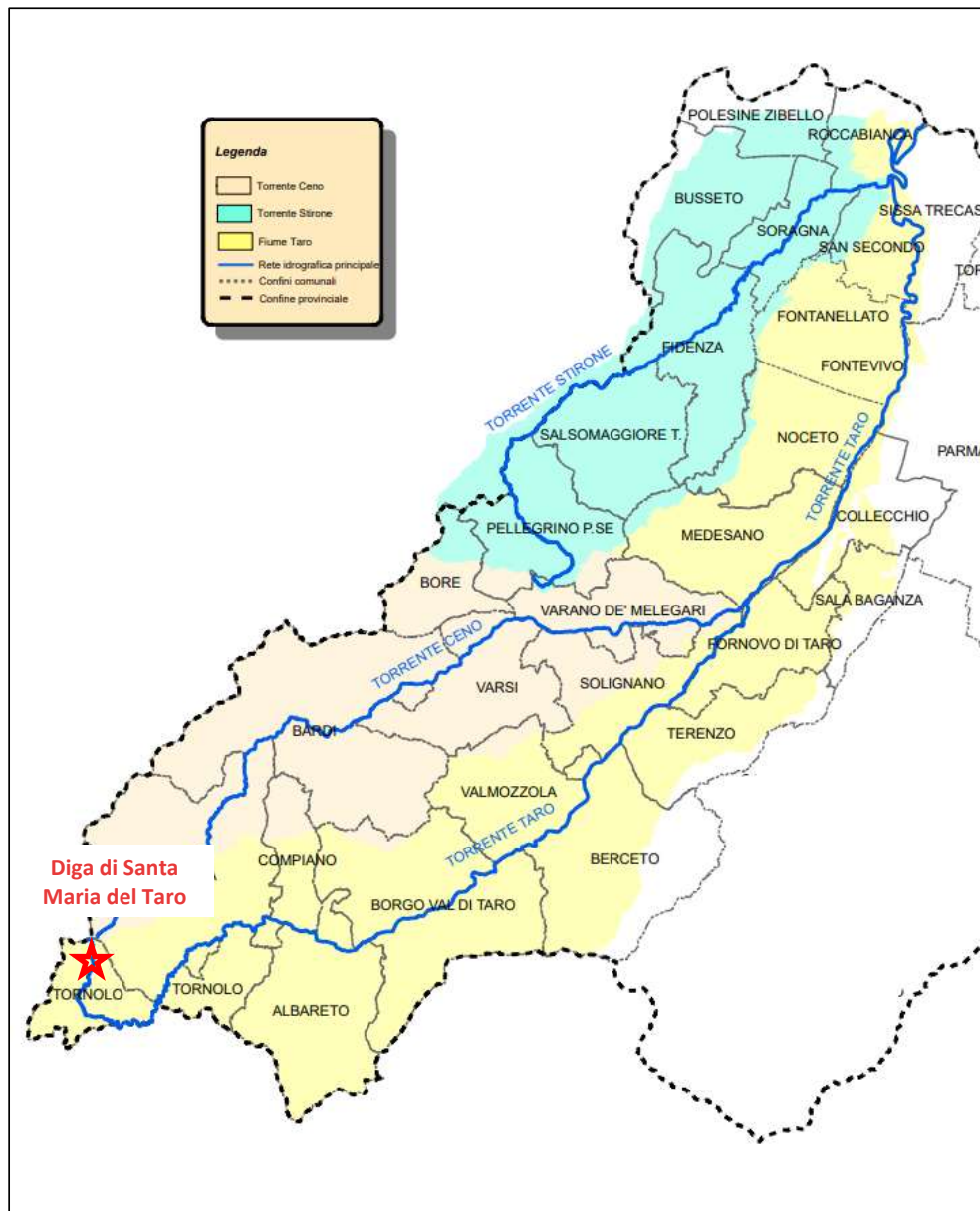
Il contenuto del presente Piano di Emergenza Diga rappresenta la situazione aggiornata al momento della stesura e approvazione del Documento con Deliberazione della Giunta regionale.

<sup>1</sup> opere di sbarramento, dighe di ritenuta o traverse, che superano i 15 metri di altezza o che determinano un volume d’invaso superiore a 1.000.000 di metri cubi

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## 2. INQUADRAMENTO TERRITORIALE

### 2.1 BACINO DEL FIUME TARO



#### 1. Inquadramento cartografico

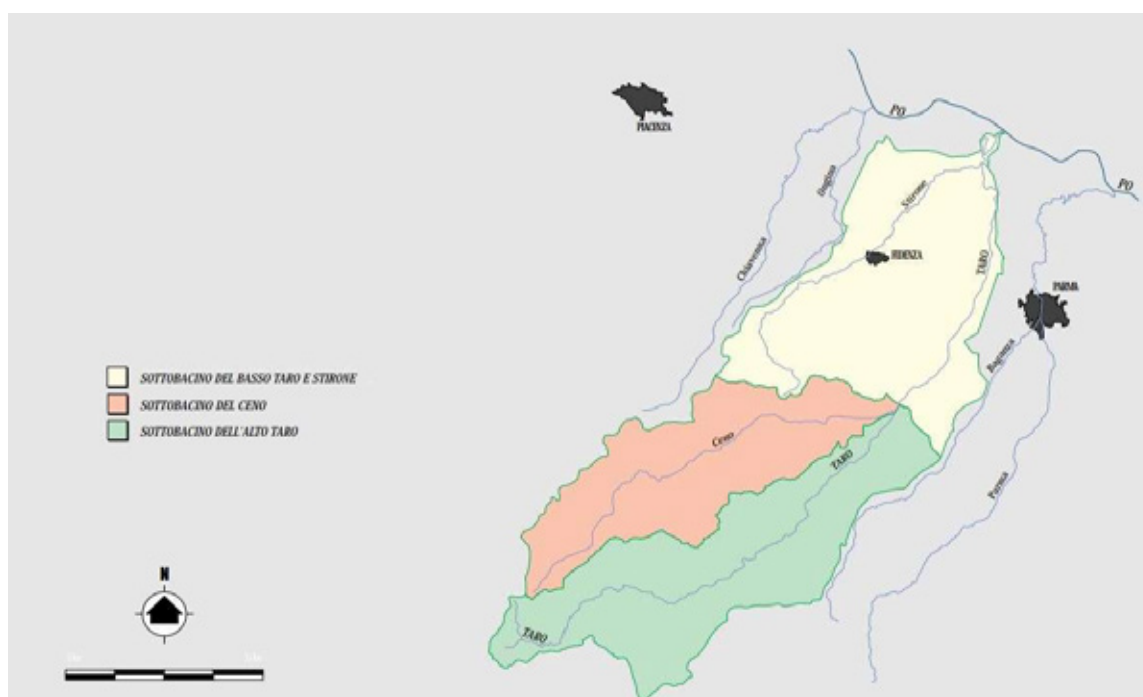
Il fiume Taro nasce dal Monte Penna (1.735 m s.m.) e rappresenta l'affluente principale del Po in provincia di Parma, nel quale confluisce presso Gramignazzo tra i comuni di Roccabianca e Sissa. Il corso del fiume Taro, si sviluppa in direzione sudovest — nord-est sino allo sbocco in pianura, dove crea un'ampia conoide con apice tra Fornovo e Collecchio. Successivamente muta direzione,

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assumendo andamento meridiano fino alla confluenza in Po, dopo aver compiuto, a partire dalle sorgenti, un percorso di circa 150 km.

Gli affluenti più importanti sono i torrenti Gotra, Tarodine e Manubiola nella parte alta del bacino, il torrente Mozzola nella media montagna, i torrenti Ceno (il cui sottobacino si estende per 536 km<sup>2</sup>), Sporzana e Dordone nella fascia collinare e Recchio e Stirone nel tratto di pianura.

Il bacino idrografico del Taro viene suddiviso nelle seguenti componenti: l'asta del Taro, l'asta del Ceno, l'asta dello Stirone e il bacino montano.



Il primo cordone collinare è formato da una linea di affioramenti di argille-grigio azzurre del Pliocene e del Pleistocene inferiore, spesso modellate da calanchi, mentre nell'area del basso e medio Appennino prevalgono rocce calcaree e arenarie. Nell'alto Appennino affiorano le arenarie oligoceniche (macigni) affini a quelle toscane.

### Aspetti idrologici

I bacini del massiccio centrale appenninico, di esposizione sud-ovest — nordest, sono caratterizzati da rilievi non molto elevati, in genere a quota tra i 1.000 e 2.000 m s.m.; il regime pluviale, di tipo sub-litoraneo appenninico, è contraddistinto da elevata piovosità solo nelle zone prossime al crinale, dovuta alla particolare intensità dei fronti, che per ragioni orografiche e per la vicinanza del mar Ligure tendono ad amplificare la loro azione; nella parte collinare e di pianura la piovosità è

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invece modesta. Eventi meteorici intensi sono possibili in tutte le stagioni anche se il periodo compreso tra settembre e novembre è quello con la massima incidenza di eventi gravosi.

Le caratteristiche morfologiche e litologiche del bacino, la forma, l'acclività media dei versanti, implicano ridotti tempi di corrivazione, con rapida formazione delle piene ed elevati valori delle portate al colmo.

I caratteri morfologici del bacino mettono in evidenza che la maggior parte delle aree tributarie sono disposte nella parte mediana dei bacini; di conseguenza gli afflussi meteorici che causano condizioni idrometriche più elevate per l'ultimo tratto dell'asta principale sono quelli correlati da massimi di precipitazione che si concentrano in tale parte del bacino. Nel bacino idrografico le precipitazioni medie variano da 800 mm/anno a circa 2000 mm/anno.

#### **Quadro dei dissesti sui corsi d'acqua principali**

Il tratto medio-basso del Taro, da Fornovo all'attraversamento della via Emilia, non denota dissesti di particolare criticità.

Sono presenti aree potenzialmente allagabili per la piena di riferimento (TR 200 anni), in prossimità dell'abitato di Fornovo di Taro in destra.

Il tratto terminale dell'asta fluviale, dalla via Emilia all'immissione in Po, è caratterizzato da un grado di protezione dalle piene non sempre sufficiente, dovuto a elementi di inadeguatezza sia idraulica che strutturale di alcuni tratti degli argini continui esistenti su entrambe le sponde.

Un ulteriore fattore di criticità per la parte di pianura è costituito dalle anomalie di regimazione del reticolo idrografico minore (canale di S. Carlo, Scannabecco, Rigosa Nuova e Rigosa Vecchia), con elevato rischio di allagamento. I fenomeni di erosione sono localizzati lungo l'asta nei punti a maggiore sollecitazione, ma non costituiscono condizioni di particolare criticità.

Il torrente Stirone, da Scipione di Salsomaggiore Terme all'immissione in Taro, è caratterizzato da fenomeni di erosione spondale e di fondo a carattere sporadico e di intensità generalmente contenuta. Aree a rischio di allagamento sono individuabili in prossimità di Fidenza, tra la via Emilia e l'autostrada A1 e in corrispondenza di Soragna.

#### **Quadro dei dissesti sui versanti e sulla rete idrografica minore**

Tutto il bacino montano presenta franosità elevata con picchi di frequenza molto elevati tra la confluenza del torrente Gotra e la Valmozzola e nei territori in destra poco a monte della confluenza del Ceno.

Il basso Taro presenta sempre un'alta franosità. I fenomeni di dissesto lungo i corsi d'acqua maggiormente presenti sono l'erosione di sponda (circa il 35% dei casi) e il sovralluvionamento delle aste.

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Il dissesto di carattere torrentizio (sovralluvionamento) e di conoide sul bacino montano è elevato, con particolare importanza nel tratto mediano a monte di Solignano. I primi fenomeni di esondazione si manifestano a valle della confluenza del Ceno.

### **Gli squilibri sui corsi d'acqua principali e nei territori di fondovalle**

Nel tratto alto del corso d'acqua, fino a Fornovo, gli squilibri che riguardano l'asta principale sono da correlare agli estesi movimenti franosi a valle di Borgo Taro, in atto o quiescenti, che, arrivando fino all'alveo, determinano una diminuzione della sezione utile di deflusso e danni alle opere esistenti.

### **Gli squilibri nei territori collinari e montani**

Le principali condizioni di squilibrio connesse ai fenomeni di dissesto che interessano il reticolo idrografico minore nella parte montana del bacino del Taro sono da mettere in relazione alla elevata tendenza all'erosione di fondo e di sponda, che contribuisce a innescare o aggravare i fenomeni di instabilità di versante e ai locali fenomeni di sovralluvionamento. I corsi d'acqua in cui si localizzano i maggiori problemi puntuali, sono i torrenti Gotra, Lubiana, Mozzola, Dordone e Manubiola. Situazione analoga si presenta lungo i corsi d'acqua del sottobacino del Ceno e interessa sia il Ceno, nel tratto compreso tra Bardi e Varsi, sia i suoi affluenti rio Timore, torrenti Pezzola, e Cenedola.

### **Piene storiche principali**

L'evento maggiormente gravoso sul bacino del Taro è quello del novembre 1982; in alta Val Taro le precipitazioni di 12 ore hanno raggiunto i 280 mm; le massime portate al colmo stimate nelle sezioni di Fornovo e S. Quirico sono di 3.200 e 2.000 m<sup>3</sup> /s. Lungo l'asta Taro si verificano rotte arginali in destra, in prossimità della confluenza in Po, nei comuni di Parma, Sissa, San Secondo Parmense, Trecasali e in sinistra a Fontanellato. La piena provoca inoltre il crollo del ponte della linea ferroviaria Bologna-Milano e del ponte stradale in comune di Fornovo. Gli allagamenti sul fondovalle interessano 5.000 ha di terreni agrari. Sui versanti si manifestano numerosi dissesti, in gran parte da riattivazione di frane; di particolare gravosità sul versante destro del Taro nel comune di Albareto e sul versante destro del torrente Ghiara in corrispondenza della frazione di Case Ugolini in comune di Salsomaggiore Terme. Rilevanti fenomeni di attività torrentizia interessano i torrenti Tarodine, Varacola e Ceno.

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## 2.2 DIGA DI SANTA MARIA DEL TARO

La diga di Santa Maria del Taro è situata nel Comune di Tornolo in Provincia di Parma ed intercetta le acque del fiume Taro, appartenente al bacino idrografico del Po. Costruita negli anni 1917-1919 (collaudo del 01/08/1923), la struttura è a gravità in materiali sciolti. L'invaso creato dall'opera di ritenuta ha per finalità la regolazione giornaliera dell'energia prodotta dall'impianto di Strinabecco.

La diga è stata oggetto di lavori di ristrutturazione consistenti essenzialmente nella sopraelevazione del piano di coronamento da quota 1054,60 a quota 1056,30 m s.l.m., rifacimento del manto di tenuta, del taglione e dello schermo di iniezioni, ridimensionamento e ricostruzione dello sfioratore.

Di seguito si riportano i dati tecnici relativi alla diga come da Documento di Protezione Civile approvato dalla Prefettura - UTG di Parma con Decreto Prefettizio n. 66150 del 20/10/2022.

### Caratteristiche generali

- Ente Concessionario:	Tirreno Power S.p.A.-Roma
- Ente Gestore:	Tirreno Power S.p.A.- Genova
- Ufficio Tecnico per le Dighe di competenza:	Milano
- Utilizzazione prevalente:	produzione di energia elettrica
- Comune nel cui territorio è ubicato lo sbarramento:	Tornolo
- Provincia/e:	Parma e La Spezia
- Corso d'acqua sbarrato:	Fiume Taro
- Corsi d'acqua a valle:	Po
- Bacino idrografico:	Po
- Periodo di costruzione:	1917-1919
- Stato dell'invaso	Esercizio normale

### Dati tecnici

- Tipologia diga (punto B.2. D.M. 26/6/14 o norma precedente):	DM 24/03/82: diga di pietrame con malto di tenuta di materiali artificiali (b.3)
- Altezza diga ai sensi L.584/94:	18 m
- Volume di vaso ai sensi L. 584/94:	0,05x10 <sup>6</sup> m <sup>3</sup>
- Superficie bacino idrografico direttamente sotteso:	3,1 km <sup>2</sup>
- Quota massima di regolazione:	1053,30 m s.l.m.
- Quota di massimo vaso:	1054,30 m s.l.m.
- Volume di laminazione compreso tra quota autorizzata e quota	



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raggiungibile in via straordinaria: 0,009 Mm<sup>3</sup>

#### Portate caratteristiche degli scarichi

- Portata massima scarico di superficie alla quota di massimo invaso (1054.30 m sm) (con paratoia a ventola sollevata) 80 m<sup>3</sup>/s
- Portata massima scarico di superficie alla quota di massimo invaso (1054.30 m sm) (con paratoia a ventola abbassata) 83.29 m<sup>3</sup>/s
- Portata massima scarico di fondo alla quota di massimo invaso (1054.30 m sm) 6.3 m<sup>3</sup>/s

**Portata massima transitabile in alveo a valle contenuta nella fascia di pertinenza idraulica (Q<sub>Amax</sub>)<sup>2</sup>:** 30 m<sup>3</sup>/s

**Portata di attenzione scarico diga (Q<sub>min</sub>)<sup>2</sup>:** 10 m<sup>3</sup>/s

**Portata di attenzione scarico diga - soglie incrementali (ΔQ)<sup>2</sup>:** 6 m<sup>3</sup>/s

**Soglia minima di portata al di sotto della quale non è previsto l'obbligo della comunicazione di preallerta per rischio idraulico a valle:** 8.49 m<sup>3</sup>/s

#### Autorità idraulica a valle della diga:

Agenzia regionale per la Sicurezza territoriale e la Protezione civile - Ufficio Sicurezza territoriale e Protezione civile Parma (USTPC-PR)

Regione Liguria - Settore Difesa del Suolo di La Spezia

#### Comuni con territori potenzialmente interessati dalle aree di allagamento:

Provincia di Parma: Tornolo (competente per l'ubicazione della diga), Bedonia

Provincia di La Spezia: Varese Ligure

<sup>2</sup> Estremi dell'atto dell'Autorità idraulica di convalida di Q<sub>Amax</sub>, Q<sub>min</sub> e ΔQ: Agenzia Regionale per la Sicurezza Territoriale e la Protezione Civile, nota n. 44473 del 12/10/2017; Servizio Area Affluenti Po, nota n. PC/2017/0031260 del 13/07/2017.

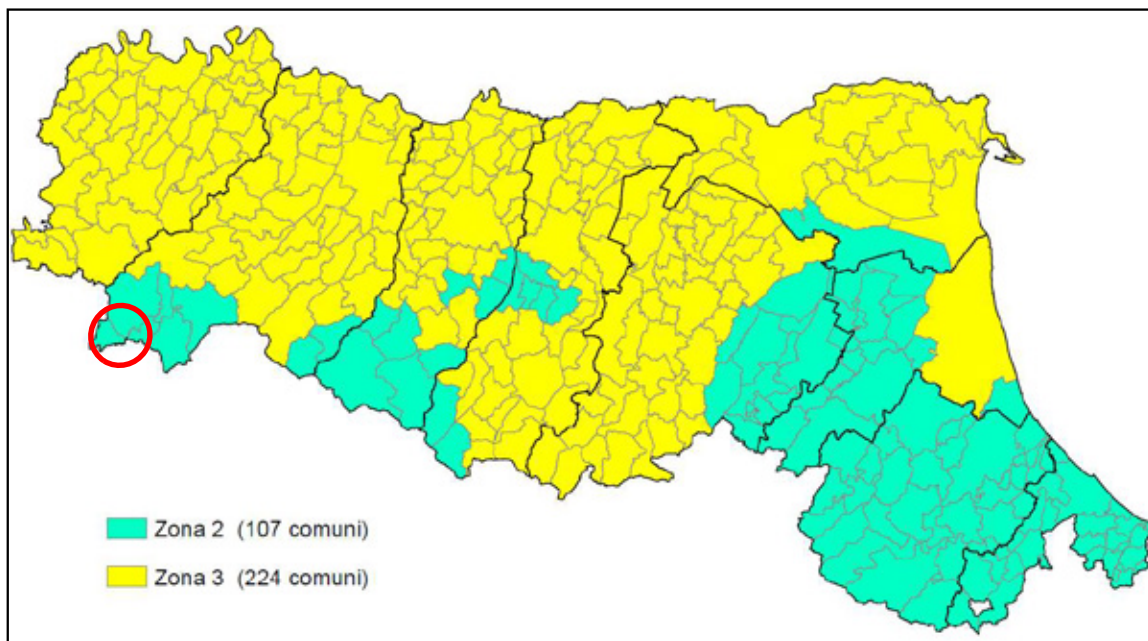
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## 2.3 SISMICITÀ DELL'AREA

La classificazione sismica del territorio nazionale, i cui criteri sono stati emanati con Ordinanza del Presidente del Consiglio dei Ministri n.3274 del 20 marzo 2003, prevede le seguenti 4 zone sismiche, determinate in base alla pericolosità sismica:

- Zona 1: sismicità alta
- Zona 2: sismicità media
- Zona 3: sismicità bassa
- Zona 4: sismicità molto bassa

Il Comune su cui è ubicata la diga, come evidenziato dalla mappa sottostante di riclassificazione sismica dell'Emilia-Romagna (DGR Emilia-Romagna n. 1164 del 23/07/2018), è iscritto in zona 2, a sismicità media ossia in un territorio in cui sono possibili forti terremoti.



4. Classificazione sismica dei Comuni della Regione Emilia-Romagna

### 3. SCENARI DI EVENTO, DI DANNO E RISORSE DISPONIBILI

#### 3.1. AREE INTERESSATE DAGLI SCENARI D'EVENTO

Ai sensi della normativa sono definiti i requisiti degli studi che i concessionari devono predisporre per la mappatura delle aree a rischio di inondazione conseguenti a piene artificiali per manovre degli organi di scarico e piene artificiali per ipotetico collasso della diga.

Gli scenari, inviati dall'Ufficio tecnico per le dighe di Milano con nota prot. 31959 del 16/06/2022, non sono stati prodotti dall'attuale gestore, Tirreno power S.p.A., ma dal precedente gestore ENEL S.p.A.. Nella stessa nota, l'Ufficio specifica che i file delle aree allagabili in formato georeferenziato costituiscono la restituzione in formato vettoriale degli originali cartacei e, pertanto, hanno valore indicativo, in quanto gli unici documenti ufficiali agli atti dell'Ufficio sono gli studi cartacei della propagazione delle onde di piena artificiale e la restituzione degli stessi in formato PDF.

ENEL SpA, ex-gestore della diga di Santa Maria del Taro, ha commissionato lo studio della propagazione dell'onda di piena derivante dall'ipotetico collasso della diga ad ISMES SpA ed ha svolto direttamente lo studio della propagazione dell'onda di piena derivante dal rilascio della massima portata degli organi di scarico.

Lo studio relativo alla massima portata rilasciata dagli organi di scarico è stato redatto nel 1999 ai sensi della Circolare PCM n. DSTN/2/22806 del 13/12/1995. Lo studio relativo allo scenario di collasso della diga è stato svolto nel 1993, precedentemente all'emanazione della Circolare, e non è stato aggiornato ai sensi della Circolare suddetta, ma fa riferimento alle prescrizioni contenute nella Circolare del Ministero dei LL.PP. n.352 del 04/12/1987.

Nello studio ISMES SpA del 1993 la geometria dell'alveo è stata ricostruita in base alle carte topografiche IGM 1:25.000. In particolare, le 18 sezioni trasversali a valle della diga sono state estratte dalle curve di livello. Si osserva che la ricostruzione della geometria dell'alveo tramite questa modalità, senza l'esecuzione di specifici rilievi in sito, non risulta in grado di tenere conto di opere in alveo (attraversamenti) e della presenza di ostacoli locali alla corrente (eventuali restringimenti localizzati, presenza di ostacoli al deflusso, in particolare in zone abitate). La relazione stessa dello studio, a pag. 7 paragrafo 3.1, sottolinea che alla rappresentazione della geometria dell'alveo utilizzata *"possono sfuggire dettagli di un certo rilievo per il deflusso locale dell'onda di piena"*. Per tale motivo, con nota prot. n. 14/10/2022.0053490.U del 14.10.2022, è stato richiesto alla Direzione Generale per le dighe, infrastrutture idriche ed elettriche di sollecitare al gestore l'aggiornamento dello scenario di collasso ai sensi della Circolare vigente ed alle prescrizioni in essa indicate. Nelle more dell'aggiornamento, ai fini dell'individuazione degli elementi esposti interessati dallo scenario di crollo (vedi par. 3.2), si è scelto un approccio cautelativo dovuto alle incertezze nella definizione dello stesso.

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La simulazione di collasso interessa un'area che si estende dalla diga fino alla sezione d'alveo posta a ca 18.3 km di distanza, all'altezza circa della località Bruschi di Sotto (Comune di Bedonia).

La simulazione di rilascio della massima portata degli organi di scarico interessa un'area che si estende dalla diga fino alla sezione d'alveo posta a ca 26 km di distanza, in corrispondenza di Tornolo (Comune di Tornolo).

#### **SCENARIO DI MASSIMA PORTATA DEGLI SCARICHI**

Le aree cartografate per lo **scenario di massima portata degli scarichi** (Allegato 7) sono quelle riportate nello studio ENEL SpA "Calcolo del profilo delle onde di piena artificiali a valle della diga di Santa Maria del Taro (Maggio 1999)".

#### **SCENARIO DI IPOTETICO COLLASSO**

Le aree cartografate per lo **scenario di ipotetico collasso** (Allegato 7) sono quelle riportate nello studio "Studio dell'onda di sommersione conseguente all'ipotetico collasso della diga (Novembre 1993)".

### **3.2. ELEMENTI ESPOSTI**

Lo scenario riconducibile al rischio di inondazione per manovre degli organi di scarico di cui al precedente paragrafo, descrive una onda di piena artificiale contenuta all'interno dell'alveo attivo del fiume, per cui, come evidenziato nella cartografia allegata al presente piano (Allegato 7), non sono stati individuati elementi esposti.

Per quanto riguarda lo scenario derivato dal rischio di allagamento per collasso dello sbarramento, valutate le criticità del modello elaborato dal gestore (paragrafo 3.1), nelle more dell'aggiornamento richiesto, si è deciso di perseguire la via cautelativa e di ampliare l'area interessata dal provvedimento di evacuazione in corrispondenza dell'abitato di Santa Maria del Taro (indicata nelle tavole come "*zona di evacuazione cautelativa*"). L'area interessata è indicata nella cartografia allegata (Allegato 7) e contiene i seguenti elementi esposti:

#### **Comune di Tornolo:**

- 38 Edifici residenziali
- 10 Edifici commerciali
- 11 Depositi
- 1 Centrale idroelettrica (Strinabecco)
- 1 edificio per il culto
- 1 edificio privato che ospita le Poste

#### **Comune di Bedonia:**

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- 1 Edificio residenziale

Tali elementi sono elencati nell'Allegato 3.

Sono stati inoltre rappresentati:

- Ponti ricadenti nel tratto di fiume interessato dagli scenari
- Località abitate

Si demanda ai Comuni e ai piani comunali di protezione civile il compito di verificare, integrare e specificare i dati relativi alle attività localizzate nelle aree a rischio.

### **3.3. CENTRI OPERATIVI DI COORDINAMENTO**

I centri operativi di coordinamento rappresentano uno degli elementi strategici fondamentali della pianificazione di protezione civile per la gestione dell'emergenza, attraverso il puntuale monitoraggio della situazione e delle risorse. Il piano di emergenza riporta, quindi, l'indicazione dell'ubicazione e dell'organizzazione dei centri operativi di coordinamento, strutturati in funzioni di supporto, nonché degli eventuali centri operativi periferici ad esso afferenti.

L'assetto organizzativo dei diversi livelli di coordinamento, in caso di eventi prevedibili comporta l'attivazione progressiva del relativo centro operativo di coordinamento e delle funzioni di supporto, secondo specifiche fasi operative, tenendo conto che una situazione di emergenza non sempre richiede l'attivazione di tutte le funzioni previste.

Nell'Allegato 4 si riporta l'elenco dei Centri di Coordinamento presenti nel territorio oggetto del presente piano; di seguito se ne descrivono brevemente le caratteristiche.

#### **CCS - Centro Coordinamento Soccorsi**

Organo di supporto al Prefetto per l'individuazione delle strategie generali di intervento nell'ambito delle operazioni di protezione civile. Il CCS, che ha sede in Prefettura, è attivato dal Prefetto, è presieduto dal Prefetto di Parma o da un funzionario delegato.

#### **SOPI - Sala Operativa Provinciale Integrata**

La Sala Operativa Provinciale Integrata attua quanto stabilito in sede di CCS, come previsto dalla direttiva del Presidente del Consiglio dei Ministri del 3 dicembre 2008.

La SOPI ha sede presso il Centro Unificato di protezione civile di Parma ed è organizzata secondo le funzioni di supporto che possono essere attivate in tutto o in parte a seconda dell'evento:

- Unità di coordinamento
- Rappresentanze delle strutture operative
- Assistenza alla popolazione
- Sanità e assistenza sociale
- Logistica materiali e mezzi
- Telecomunicazioni d'emergenza
- Accessibilità e mobilità
- Servizi essenziali
- Attività aeree e marittime
- Tecnica e di valutazione
- Censimento danni e rilievo agibilità
- Volontariato
- Rappresentanza dei beni culturali
- Stampa e Comunicazione
- Supporto Amministrativo e finanziario

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- Continuità amministrativa

#### **CUP – Centro Unificato Provinciale di Protezione Civile.**

Il CUP è la struttura permanente per la gestione della protezione civile a livello provinciale, in emergenza ed in ordinario.

#### **COC - Centro Operativo Comunale**

Per garantire il coordinamento delle attività di protezione civile in situazioni di emergenza prevista o in atto di particolare criticità, il Sindaco in quanto Autorità territoriale di protezione civile, dispone dell'intera struttura comunale e può chiedere l'intervento delle diverse strutture operative della protezione civile presenti sul proprio territorio nonché delle aziende erogatrici di servizi di pubblica utilità. La sede e l'organizzazione della struttura di coordinamento costituiscono nel loro insieme il COC, strutturato in funzioni di supporto e attivato dal Sindaco con apposita ordinanza.

Le funzioni del COC che possono essere attivate in tutto o in parte a seconda dell'evento e comunque secondo la specifica pianificazione comunale, sono indicativamente le seguenti:

- Unità di coordinamento
- Rappresentanze delle strutture operative
- Assistenza alla popolazione
- Sanità e assistenza sociale
- Logistica materiali e mezzi
- Telecomunicazioni d'emergenza
- Accessibilità e mobilità
- Servizi essenziali
- Attività aeree e marittime
- Tecnica e di valutazione
- Censimento danni e rilievo agibilità
- Volontariato
- Rappresentanza dei beni culturali
- Stampa e Comunicazione
- Supporto Amministrativo e finanziario
- Continuità amministrativa

Il Sindaco può attivare preventivamente il COC anche con una sola funzione quale Presidio operativo, per garantire il flusso delle comunicazioni con le sale operative regionale e provinciale.

#### **COR - Centro Operativo Regionale**

È il presidio permanente dell'Agenzia, organizzato in una Sala Operativa, ha la funzione di raccordo tecnico e operativo fra i centri di coordinamento sul territorio, le sedi operative regionali ed il Dipartimento nazionale della protezione civile.

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Tra le strutture operative sono state censite anche le sedi centrali e periferiche delle strutture operative provinciali: Vigili del Fuoco, Carabinieri, Carabinieri Forestali, Coordinamento di Volontariato di Protezione Civile di Parma, 118 Parma.



### **3.4. AREE E STRUTTURE DI EMERGENZA**

Le aree logistiche per l'emergenza sono le aree di attesa, le aree e i centri di assistenza, le aree di ammassamento soccorritori e risorse. Queste aree sono state individuate dai singoli Comuni in sede di pianificazione di protezione civile, ivi comprese le procedure di accesso all'utilizzo di dette strutture, anche attraverso accordi o convenzioni.

Nell'Allegato 5 si riporta l'elenco delle aree e strutture d'emergenza fruibili in base agli scenari di evento descritti al paragrafo 3.1. e alla mappatura delle aree potenzialmente allagabili per ogni scenario.

Le aree di cui all'allegato 5 vengono verificate dai Comuni e meglio specificate nei loro piani comunali di protezione civile. In caso di evento o in fase previsionale, la fruibilità di ciascun'area, inoltre, andrà nuovamente verificata.

### **3.5. MATERIALI E MEZZI**

Nel piano sono identificate le procedure di attivazione e mobilitazione del Volontariato. Nella tabella dell'Allegato 6 è riportato l'elenco e l'ubicazione delle principali risorse a disposizione, specifiche per il rischio in oggetto.

### **3.6. CARTOGRAFIE**

In Allegato 7 sono riportate le mappe dello scenario elaborate dal soggetto gestore, e la cartografia composta di "carta di inquadramento territoriale e scenario" con scala 1: 25.000 e "carte degli elementi esposti" in scala 1: 2.500.

La tavola di inquadramento in scala 1:25.000 contiene i seguenti elementi:

- aree interessate dai 2 scenari di rischio (massima portata degli scarichi e collasso)
- centri di coordinamento
- aree e strutture di emergenza
- strutture operative (VVF, Carabinieri, ecc..)
- infrastrutture di trasporto (autostrade, strade statali, provinciali, comunali, rete ferroviaria)
- località abitate
- sensori (idrometri e pluviometri)
- cancelli

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Nelle 13 tavole di dettaglio in scala 1:2.500 sono rappresentati, oltre a quelli inseriti nella tavola di inquadramento, i seguenti elementi:

- Scenari aree allagabili, compresa la “zona di evacuazione cautelativa” (vedi par. 3.2)
- Elementi esposti:
  - Edifici residenziali e commerciali (da ortofoto)
  - Centrale idroelettrica
  - Edificio per il culto
  - Poste
- Elementi critici della viabilità:
  - Ponti
  - Cancelli
- Sono inoltre indicate strutture sanitarie presenti, ma non comprese nell’area coinvolta dallo scenario di crollo (Ambulatorio Croce Verde e Farmacia).

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## 4. ATTIVAZIONE DELLE FASI DI ALLERTA

I rischi connessi alla presenza di uno sbarramento idrico derivano da due tipologie d'evento: il rilascio in alveo di quantitativi consistenti di acqua prima contenuti nell'invaso (rischio idraulico a valle) e il cedimento della struttura di sbarramento (rischio diga).

Tali eventi possono verificarsi a seguito di condizioni meteo avverse, di scosse sismiche, movimenti franosi o altre cause.

Il gestore della diga, al presentarsi o in previsione di un rischio idraulico a valle della diga o di una fragilità strutturale della stessa, è tenuto ad attivare un'allerta.

Le fasi di allerta, descritte nel Documento di Protezione Civile della diga, si diversificano in base al fenomeno in atto, al rilascio degli scarichi (in atto o programmato), al livello dell'acqua contenuta nell'invaso e ad altre eventuali criticità che rappresentino un pericolo per il territorio.

Di seguito si riportano le condizioni di attivazione delle fasi, suddivise per rischio diga e rischio idraulico a valle, e il flusso di comunicazioni del gestore e dell'Agenzia ARSTePC.

### Legenda tabelle

$h$  = livello d'acqua nel serbatoio

$Q_s$  = portata scaricata a seguito dell'apertura di paratoie a comando volontario o automatico

$Q_{A_{max}}$  = portata massima transitabile in alveo a valle dello sbarramento contenuta nella fascia di pertinenza idraulica di cui al punto B) della circolare della Presidenza del Consiglio dei ministri 13 dicembre 1995, n. DSTN/2/22806

$Q_{min}$  = soglia di attenzione scarico diga; tale soglia costituisce indicatore dell'approssimarsi o manifestarsi di prefigurati scenari d'evento (quali ad esempio esondazioni localizzate per situazioni particolari, lavori idraulici, presenza di restringimenti, attraversamenti, opere idrauliche, ecc.) ed è determinato in base alle situazioni che potrebbero insistere sull'asta idraulica a valle della diga in corso di piena, tenendo conto dell'apporto, in termini di portata, generabile dal bacino imbrifero a valle della diga

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#### 4.1. PARAMETRI DI ATTIVAZIONE DELLE FASI

##### 4.1.1. Rischio diga

<b>RISCHIO DIGA</b>		
<b>Fase di allerta</b>	<b>EVENTO</b>	<b>SCENARIO</b>
<b>PREALLERTA</b>	METEO	h > 1053,55 m s.l.m.
	SISMA	Sisma che, per magnitudo e distanza epicentrale (fonte dati: INGV - Istituto nazionale di geofisica e vulcanologia) comporta la necessità di effettuazione degli specifici controlli secondo la procedura stabilita dai F.C.E.M. o, in via generale, dalla DG Dighe.
<b>VIGILANZA RINFORZATA</b>	METEO	h > 1053,80 m s.l.m.
	SISMA	I controlli attivati a seguito di un evento sismico evidenziano: 1. Anomali comportamenti di cui sotto 2. Danni c.d. «lievi o riparabili» che non comportino: •pericolo di rilascio incontrollato di acqua •pericolo di compromissione delle funzioni di tenuta idraulica o di regolazione o della stabilità delle opere o delle sponde
	OSSERVAZIONI	Insorgere di anomali comportamenti dello sbarramento (ivi compresa la fondazione) o delle opere complementari e accessorie o delle sponde del serbatoio o di significativi malfunzionamenti degli organi di scarico
	DIFESA	Ragioni previste nel piano dell'organizzazione della difesa militare o su disposizione del prefetto per esigenze di ordine pubblico o di difesa civile

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	ALTRI EVENTI	Altri eventi anche di origine antropica, aventi conseguenze, anche potenziali, sulla sicurezza della diga
<b>PERICOLO</b>	METEO	h > 1054,30 m s.l.m.
	SISMA	Quando i controlli attivati nelle fasi precedenti, anche a seguito di sisma, evidenzino danni c.d. «severi o non riparabili» che, pur allo stato senza rilascio incontrollato di acqua, facciano temere, anche a causa della loro eventuale progressione, la compromissione delle funzioni di regolazione dei livelli di invaso
	MOVIMENTI FRANOSI interessanti le sponde	Movimenti franosi interessanti le sponde dell'invaso, ivi compresi i versanti sovrastanti, che possano preludere a formazioni di onde con repentini innalzamenti del livello d'invaso
	ALTRI EVENTI	Filtrazioni, spostamenti, lesioni o movimenti franosi o di ogni altra manifestazione interessante lo sbarramento (ivi comprese le fondazioni), gli organi di scarico od altre parti dell'impianto di ritenuta che facciano temere la compromissione della tenuta idraulica o della stabilità delle opere stesse, o comunque la compromissione delle funzioni di regolazione dei livelli di invaso
<b>COLLASSO</b>	RILASCIO INCONTROLLATO DI ACQUA	Al manifestarsi di <b>fenomeni di collasso</b> , anche parziali, o comunque alla <b>comparsa di danni all'impianto di ritenuta</b> o di <b>dissesto</b> interessanti gli argini e/o l'alveo (sifonamenti nel terreno di fondazione) che determinino il <u>rilascio incontrollato di acqua</u> o che inducano ragionevolmente ad ipotizzare l'accadimento di un <b>evento catastrofico, con rischio di perdite di vite umane o di ingenti danni.</b>

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#### 4.1.2. Rischio idraulico a valle

<b>RISCHIO IDRAULICO A VALLE</b>		
<b>Fase di allerta</b>	<b>EVENTO</b>	<b>SCENARIO</b>
<b>PREALLERTA</b>	METEO	$Q_s > 8,49 \text{ m}^3/\text{s}$ In previsione o comunque all'inizio di operazioni di scarico effettuate tramite apertura di paratoie a comando volontario o automatico, in condizioni di piena prevista o in atto
<b>ALLERTA</b>	METEO	$Q_{\min} > 10 \text{ m}^3/\text{s}$ Portata complessivamente scaricata, inclusi gli scarichi a soglia libera

#### 4.2. COMUNICAZIONE PER L'ATTIVAZIONE DELLE FASI

Per ciascuna fase di allerta, il Documento di Protezione Civile stabilisce il flusso delle comunicazioni da diramare e/o ricevere e il modello attraverso il quale tali comunicazioni vengono effettuate.

Le fasi di allertamento per rischio diga e rischio idraulico a valle sono attivate dal gestore e comunicate ai soggetti interessati tra cui l'Agenzia ARSTePC della Regione Emilia-Romagna.

L'Agenzia, secondo la direttiva PCM 8 luglio 2014, è responsabile dell'allertamento degli Enti e dei soggetti per il territorio a valle della Diga.

**Ai fini dell'invio delle comunicazioni previste dal presente Piano sono utilizzati i medesimi contatti forniti dai soggetti interessati per la ricezione delle notifiche del Sistema di Allertamento Regionale ai sensi della DGR 1761/2020 e s.m.i.**

Di seguito si descrivono le comunicazioni che vengono diramate da Tirreno Power SpA, gestore della diga, e dall'Agenzia ARSTePC, per ciascuna fase di allerta.

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Le comunicazioni vengono effettuate utilizzando il modello incluso nel documento stesso e descritto più ampiamente nell'Allegato 1 del presente piano.

#### **4.2.1. Tirreno Power SpA – Genova (Gestore)**

Le fasi di allerta per rischio diga e rischio idraulico a valle sono attivate dal gestore e comunicate agli enti interessati secondo le disposizioni indicate nel Documento di Protezione Civile approvato con nota/decreto prefettizio n. 66150 del 20/10/2022.

Nella comunicazione dell'attivazione di ciascuna fase, Tirreno Power S.p.A. riporta:

- la fase attivata
- la natura dei fenomeni in atto e la loro prevedibile evoluzione
- i provvedimenti già assunti
- Il livello dell'invaso
- l'ora presumibile dell'apertura degli scarichi, se previsti o in atto
- la portata scaricata
- in caso di **sisma**, l'entità dei danni "lievi o riparabili" o dei comportamenti anomali individuati a seguito dei controlli e delle valutazioni tecniche dell'Ingegnere Responsabile.

Con analogo modello il gestore comunica l'evoluzione della situazione e, al cessare delle condizioni che l'avevano determinata, il rientro della fase di allerta, con ritorno alle condizioni ordinarie o alla fase precedente.

Si riportano esclusivamente gli enti e le strutture competenti per la Regione Emilia-Romagna, demandando alla lettura del DPC l'approfondimento sugli enti e le strutture della Regione Liguria che ricevono le comunicazioni del gestore della diga.

#### **Rischio DIGA**

In caso di *Rischio Diga*, il gestore della diga invia la comunicazione di cui all'Allegato 1 a:

- UTD di Milano
- Prefettura - UTG di Parma (tranne in caso di *PREALLERTA*)
- Agenzia regionale per la sicurezza territoriale e la Protezione civile – COR
- Autorità idraulica competente: Agenzia regionale per la sicurezza territoriale e la Protezione civile - USTPC - Parma
- AIPO U.O. di Parma
- ARPAE-SIMC Centro Funzionale



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In caso di *PERICOLO* e di *COLLASSO*, tale comunicazione viene inviata anche al Dipartimento nazionale di Protezione Civile.

**Nel solo caso di *COLLASSO*, il gestore invia la comunicazione direttamente ai Comuni interessati dall'evento.**

In caso di **contemporaneità tra le fasi per "rischio idraulico a valle" e quelle per "rischio diga"**, il Gestore applica le procedure previste per la fase di rischio diga, integrando le comunicazioni con le informazioni previste per il concomitante rischio idraulico a valle.

In caso di ***sisma*** il gestore comunica subito all'UTD di Milano, per il tramite dell'Ingegnere Responsabile, la presenza o assenza di anomalie e danni immediatamente rilevabili e, se del caso, attiva le fasi successive e integra la comunicazione di attivazione della fase con le informazioni sull'entità dei danni o dei comportamenti anomali registrati, sulla natura dei fenomeni e sui provvedimenti assunti.

Completati i controlli, comunica gli esiti complessivi all'UTD di Milano sulla base delle valutazioni tecniche dell'Ingegnere Responsabile, esprimendosi anche in merito al rientro alla vigilanza ordinaria o alla necessità di attivare le successive fasi. In quest'ultimo caso, le due comunicazioni (la presente e quella di attivazione della fase successiva) vengono inviate contestualmente.

L'UTD di Milano invia la nota tecnica del gestore sull'esito dei controlli a:

- Dipartimento Nazionale della Protezione Civile
- Agenzia regionale per la sicurezza territoriale e la Protezione civile
- Prefettura - UTG di Parma

### **Rischio IDRAULICO A VALLE**

In caso di *Rischio Idraulico a valle*, il gestore della diga invia la comunicazione di cui all'Allegato 2 ai seguenti soggetti:

- DG Dighe/UTD di Milano
- Prefettura - UTG di Parma (tranne in caso di *PREALLERTA*)
- Agenzia regionale per la sicurezza territoriale e la Protezione civile – COR
- Autorità idraulica competente: Agenzia regionale per la sicurezza territoriale e la Protezione civile - USTPC - Parma
- AIPO U.O. di Parma
- ARPAE-SIMC Centro Funzionale

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In caso di *PREALLERTA*, il gestore della diga comunicherà sia il superamento della soglia di portata scaricata di **8.49 m<sup>3</sup>/s** che le eventuali significative variazioni della portata scaricata.

In caso di *ALLERTA*, oltre al superamento della soglia di portata scaricata pari a **10 m<sup>3</sup>/s** ( $Q_{\min}$ ), il gestore comunicherà l'eventuale raggiungimento (in aumento o in riduzione) delle soglie incrementali di **6 m<sup>3</sup>/s** ( $\Delta Q$ ).

Durante la fase di *ALLERTA* per rischio idraulico a valle, in ragione dell'inserimento nel PED di specifiche azioni per i vari soggetti del Sistema di protezione civile al presunto raggiungimento della portata massima contenuta nell'alveo del Fiume Taro ( $Q_{\max} = 30 \text{ m}^3/\text{s}$ ), il gestore effettuerà specifica comunicazione.

Per tale comunicazione si utilizzerà il modello di comunicazione allegato al Documento di Protezione Civile di cui sopra e verrà trasmessa a tutti i soggetti della rubrica.

In caso di **contemporaneità tra le fasi per "rischio idraulico a valle" e quelle per "rischio diga"**, il Gestore applica le procedure previste per la fase di rischio diga, integrando le comunicazioni con le informazioni previste per il concomitante rischio idraulico a valle.

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#### **4.2.2. Agenzia ARSTePC – Centro Operativo Regionale**

Ricevuta la comunicazione di *Rischio Diga* o di *Rischio Idraulico a valle*, l’Agenzia ARSTePC provvederà ad inviare tale comunicazione ai seguenti soggetti:

- Dipartimento nazionale di Protezione Civile
- Prefettura - UTG di Parma
- Agenzia regionale per la sicurezza territoriale e la Protezione civile:
  - Ufficio Sicurezza territoriale e Protezione civile Parma
  
- AIPO Ufficio Operativo di Parma
- ARPAE – SIMC centro funzionale
- Provincia di Parma
- Comuni di Tornolo, Bedonia
- Direzione Regionale Vigili del Fuoco
- Comando Provinciale dei Vigili del Fuoco di Parma
- Comando Regionale Carabinieri Forestale Emilia-Romagna
- Gruppo Provinciale Carabinieri Forestali Parma
- Coordinamento del Volontariato di Parma
- 118 Centrale Operativa Emilia Ovest
- Area Geologia, Suoli e Sismica
- Montagna 2000 S.p.A.
- Socogas S.p.A.
- Telecom
- Carbotrade Gas S.r.l.

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## 5. MODELLO D'INTERVENTO

Il modello di intervento è stato delineato sulla base degli scenari di evento e delle fasi di allerta per “rischio diga” e per “rischio idraulico a valle” attivate dal gestore nelle condizioni e nelle modalità indicate nel Documento di Protezione Civile della Diga Santa Maria del Taro (approvato con Decreto Prefettizio n. 66150 del 20/10/2022).

Il modello di intervento individua le componenti istituzionali e le strutture operative che devono essere gradualmente attivate nei centri decisionali della catena di coordinamento (DI.COMA.C - C.O.R. - CCS - C.O.C) e nel teatro d'evento; ne riporta, inoltre, responsabilità e compiti durante le diverse fasi d'allerta.

Un importante strumento di riferimento per la valutazione delle criticità esistenti e/o previste e degli scenari d'evento è costituito dal sito ufficiale [AllertaMeteo della Regione Emilia-Romagna](https://allertameteo.regione.emilia-romagna.it) (<https://allertameteo.regione.emilia-romagna.it>).

Tutti i soggetti del Sistema di Protezione Civile sono tenuti a consultare quotidianamente tale sito (AllertaMeteo) per informarsi sulle criticità previste sul proprio territorio per i fenomeni meteo, idrogeologici e idraulici e, in fase di emergenza, per aggiornarsi sull'evoluzione della situazione in atto.

Qualora le condizioni meteo, previste o in atto, siano critiche, i proprietari delle infrastrutture di servizi, pur in assenza di notifiche da parte dell'Agenzia ARSTePC o del gestore, sono anch'essi invitati a tenersi aggiornati consultando il sito ufficiale **AllertaMeteo** della Regione Emilia-Romagna

Per quanto concerne le azioni attuate dai Comuni, si rimanda ai singoli Piani comunali di protezione civile, nei quali vengono descritte dettagliatamente le modalità di attuazione ed i responsabili di tali attività, il numero di persone/squadre coinvolte, gli enti interessati, le procedure previste, i modelli delle ordinanze e dei provvedimenti amministrativi da emettere (all'occorrenza) ed il flusso di informazioni da assicurare prima, durante e al termine dell'evento.

In caso di attivazione di una fase per rischio connesso alla diga e concomitante allertamento per rischio idraulico, tutti i soggetti sono tenuti ad attuare le azioni più cautelative nei confronti della popolazione e del territorio.

Si precisa inoltre che, in riferimento alle azioni illustrate nel presente modello di intervento, per “presidio territoriale” si intendono il “presidio territoriale idrogeologico” e il “presidio territoriale idraulico” così come disposto ai paragrafi 2.2.1. e 2.2.2. del Documento per la gestione organizzativa e funzionale del sistema regionale di allertamento per il rischio meteo idrogeologico, idraulico, costiero ed il rischio valanghe, ai fini di protezione civile, approvato con DGR 1761/2020 (e s.m.i.).

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*Le comunicazioni relative all'attivazione delle fasi per rischio diga e rischio idraulico a valle hanno lo scopo principale di consentire ad enti e strutture operative del sistema regionale di protezione civile di mettere in atto specifiche attività finalizzate alla preparazione per la gestione dei fenomeni attesi, che progressivamente saranno necessarie per fronteggiare le situazioni di criticità che possono manifestarsi sul territorio.*

*Nelle tabelle che seguono sono riportate, in maniera sintetica e generale, le principali azioni per le varie componenti del sistema di protezione civile regionale secondo le diverse fasi, che costituiscono una traccia per la definizione delle procedure operative ed organizzative di ciascun ente/struttura operativa coinvolta, da recepire all'interno della propria pianificazione.*

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### 5.1. TIRRENO POWER S.P.A. (GESTORE)

TIRRENO POWER S.p.A., gestore della diga, in caso di contemporaneità tra le fasi per “rischio idraulico a valle” e quelle per “rischio diga”, applicherà le procedure previste per la fase di rischio diga, integrando le comunicazioni con le informazioni previste per il concomitante rischio idraulico a valle.

<b>RISCHIO DIGA</b>	
<b>PREALLERTA PIENA</b>	Si tiene aggiornato sull’evolversi della situazione idrometeorologica in atto presso il Centro Funzionale della Regione ARPAE-SIMC CF, mantiene un flusso di comunicazioni con l’Agenzia ARSTePC – Centro Operativo Regionale, l’Ufficio territoriale dell’Agenzia di Parma e con i Centri di Coordinamento locali, qualora attivati
	Comunica, alle amministrazioni destinatarie della comunicazione, l’attivazione della fase, il livello di invaso, l’avvenuto superamento della soglia di portata di <b>8,49 m<sup>3</sup>/s</b> , l’avvenuto superamento della quota soglia di <b>1053,55 m s.l.m.</b> e la portata che si prevede di scaricare.
	Comunica, alle amministrazioni destinatarie della comunicazione di attivazione della fase, le eventuali significative variazioni delle portate scaricate, indicando se i valori sono in aumento o in diminuzione
	Attua i provvedimenti necessari per controllare e contenere gli eventuali effetti dei fenomeni in atto
	Comunica tempestivamente all’Ufficio territoriale dell’Agenzia di Parma e alla Prefettura - UTG di Parma l’eventuale insorgere di situazioni di rischio per la popolazione e per i beni e attua tutte le misure necessarie a fronteggiare le situazioni di criticità
<b>PREALLERTA SISMA</b>	Avvia con immediatezza i controlli secondo la procedura stabilita dal F.C.E.M. o disposta in via generale dalla DG Dighe in funzione di magnitudo e distanza epicentrale
	Compie immediato sopralluogo al fine di rilevare eventuali anomalie o danni alla struttura che risultino subito rilevabili o visivamente percepibili
	Comunica tempestivamente a UTD Milano la presenza o assenza di anomalie e danni immediatamente rilevabili e, se del caso, attiva le fasi successive

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	<p>Completata la procedura, comunica a UTD Milano gli <b>esiti complessivi dei controlli</b> sulla base delle valutazioni tecniche dell'Ingegnere Responsabile, esprimendosi anche in merito al rientro alla vigilanza ordinaria o alla necessità di attivare le successive fasi</p> <p>In caso di attivazione della fase successiva, invia contestualmente le due comunicazioni: gli esiti complessivi dei controlli e la comunicazione di attivazione della fase</p>
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA se non già attuate</b>
	Avvisa tempestivamente le amministrazioni destinatarie della comunicazione dell'attivazione della fase, comunicando il livello d'invaso attuale, la natura dei fenomeni in atto e la loro prevedibile evoluzione.
	Garantisce il coordinamento delle operazioni e l'intervento dell'Ingegnere Responsabile della sicurezza, presente presso la diga ove necessario
	Assicura la sorveglianza delle opere con presenza continua e permanente in loco di personale tecnico qualificato
	Attua gli eventuali altri provvedimenti necessari per controllare e contenere gli effetti dei fenomeni in atto
	<b>In caso di sisma</b> , integra la comunicazione di attivazione della fase con le informazioni sull'entità dei danni o dei comportamenti anomali registrati, sulla natura dei fenomeni e sui provvedimenti assunti
	Tiene informate le amministrazioni destinatarie della comunicazione di attivazione della fase sull'evolversi della situazione, comunicando il livello d'invaso, le manovre sugli organi di scarico già effettuate e/o previste, l'andamento temporale delle portate scaricate dall'inizio della fase e, ove possibile, la massima portata che si prevede di dover scaricare
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
	Nel caso di azioni o manovre idrauliche che possano avere ripercussioni sul reticolo idrografico di competenza di altri enti, comunica tempestivamente tali attività all'Ufficio territoriale dell'Agenzia di Parma e a tutti i soggetti potenzialmente coinvolti
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA se non già attuate</b>

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	<p>Mette in atto tutti i provvedimenti necessari per contenere gli effetti del fenomeno in corso</p> <p>Mantiene informate le amministrazioni destinatarie della comunicazione di attivazione della fase, <b>con comunicazioni almeno ogni 12-24 ore</b> e comunque in caso di variazioni dei fenomeni, sulla situazione e il suo evolversi e le relative possibili conseguenze</p> <p>Garantisce il coordinamento delle operazioni e l'intervento dell'Ingegnere responsabile della sicurezza, presente presso la diga</p> <p>Presenta, al termine dell'evento e comunque entro 24 ore dalla comunicazione di rientro dalla fase di «pericolo», una relazione a firma dell'Ingegnere Responsabile su quanto manifestatosi e sui provvedimenti adottati</p>
<b>COLLASSO</b>	<b>Prosegue le azioni della fase di PERICOLO</b>
	Informa <b>immediatamente</b> dell'attivazione della fase, tutti i soggetti interessati compresi i Comuni, specificando l'evento e la possibile evoluzione.
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	Si tiene aggiornato sull'evolversi della situazione idrometeorologica in atto presso il Centro Funzionale della Regione ARPAE-SIMC CF, mantiene un flusso di comunicazioni con l'Agenzia ARSTePC – Centro Operativo Regionale, l'Ufficio territoriale dell'Agenzia di Parma e con i Centri di Coordinamento locali, qualora attivati
	Al superamento di <b>8,49 m<sup>3</sup>/s</b> di portata scaricata, comunica l'attivazione della fase di preallerta e fornisce informazioni in merito al livello di invaso attuale, all'ora dell'apertura degli scarichi e alla portata che si prevede di scaricare o scaricata, ai soggetti di cui al par. 4.2.1.
	Comunica, alle amministrazioni destinatarie della comunicazione di attivazione della fase, le eventuali significative variazioni delle portate scaricate, indicando se i valori sono in aumento o in diminuzione, nonché l'ora presumibile del raggiungimento della portata <b>Q<sub>min</sub> di 10 m<sup>3</sup>/s</b>
	Comunica tempestivamente all'Ufficio territoriale dell'Agenzia di Parma e alla Prefettura - UTG di Parma l'eventuale insorgere di situazioni di rischio per la popolazione e per i beni e attua tutte le misure necessarie a fronteggiare le situazioni di criticità



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<b>ALLERTA</b>	<b>Azioni della fase di PREALLERTA se non già attuate</b>
	Comunica l'attivazione della fase e fornisce informazioni in merito al livello di invaso attuale e al superamento della portata $Q_{min}$ pari a <b>10 m<sup>3</sup>/s</b> .
	Garantisce il coordinamento delle operazioni e l'intervento dell'Ingegnere Responsabile della sicurezza, presente presso la diga ove necessario
	Assicura la sorveglianza delle opere con presenza continua e permanente in loco di personale tecnico qualificato.
	Attua gli eventuali altri provvedimenti necessari per controllare e contenere gli effetti dei fenomeni in atto.
	Si tiene informato sull'evolversi della situazione idrometeorologica in atto presso il Centro funzionale della Regione ARPAE SIMC CFD
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
	Nel caso di azioni o manovre idrauliche che possano avere ripercussioni sul reticolo idrografico di competenza di altri enti, comunica tempestivamente tali attività all'Ufficio territoriale dell'Agenzia di Parma e a tutti i soggetti potenzialmente coinvolti
	Comunica, alle amministrazioni destinatarie della comunicazione di attivazione della fase, le eventuali significative variazioni delle portate scaricate, l'eventuale raggiungimento (in aumento o in riduzione) delle soglie incrementali $\Delta Q$ <b>6 m<sup>3</sup>/s</b> , unitamente alle comunicazioni previste per la fase precedente.

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## 5.2. AGENZIA ARSTePC – CENTRO OPERATIVO REGIONALE

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Ricevuta la comunicazione di attivazione della fase dal Gestore, allerta gli enti locali del territorio regionale interessati dall'evento ai fini dell'eventuale attivazione dei relativi piani di emergenza
	Si tiene aggiornata sulla situazione meteo-idrogeologica e idraulica in atto e prevista attraverso la consultazione dei dati resi disponibili da ARPAE-SIMC CF e dal gestore.
	Attiva, se ritenuto necessario, il COR in presidio H24 dandone comunicazione all'Ufficio territoriale dell'Agenzia di Parma
	Segue l'evoluzione dell'evento, garantendo il flusso di informazioni con ARPAE-SIMC CF e Ufficio territoriale dell'Agenzia di Parma in relazione all'evento stesso, alle condizioni del territorio e all'insorgenza di eventuali criticità
	Riceve dall'Ufficio territoriale dell'Agenzia di Parma e/o dagli Enti e strutture operative, segnalazioni sull'insorgenza di eventuali criticità e/o danni
	Riceve dall'Ufficio territoriale dell'Agenzia di Parma comunicazione delle eventuali attivazioni dei presidi territoriali e dei Centri di Coordinamento
	Riceve dall'Ufficio territoriale dell'Agenzia di Parma comunicazione dell'eventuale attivazione del Coordinamento provinciale del Volontariato di protezione civile
	Attiva, se necessario, i centri logistici e mette a disposizione mezzi e materiali su richiesta dell'Ufficio territoriale dell'Agenzia di Parma ovvero di Enti e Strutture Operative a supporto degli interventi necessari per la gestione dell'evento.
	Aggiorna, se ritenuto necessario, il Dipartimento Nazionale di Protezione Civile - Centro di Coordinamento SISTEMA, relativamente all'evoluzione della situazione in atto

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<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA se non già attuate</b>
	Si interfaccia con ARPAE-SIMC CF, il gestore e l'Ufficio territoriale dell'Agenzia di Parma (anche autorità idraulica) per valutare l'intensità dell'evento ed i possibili effetti sul territorio
	Richiede, se ritenuto necessario, il supporto specialistico delle Università e dei Centri di Ricerca, secondo le modalità previste dalle convenzioni, per l'analisi dello scenario di evento in atto
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA se non già attuate</b>
	Richiede, se necessario, il supporto del personale del Corpo Nazionale dei Vigili del Fuoco (VVF) e del volontariato presso il COR
	Attiva, se ritenuto necessario, la colonna mobile regionale di protezione civile e la colonna mobile integrata
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO se non già attuate</b>
	Qualora l'evento assuma le caratteristiche di cui all'art.2 comma 1 lettera c) della legge regionale 1/2005, sentito l'Ufficio territoriale dell'Agenzia di Parma, individua e allestisce spazi idonei ad ospitare la Di.COMA.C., se istituita
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Attiva, se ritenuto necessario, il COR in presidio H24 dandone comunicazione all'Ufficio territoriale dell'Agenzia di Parma
	Qualora l'evento assuma le caratteristiche di cui all'art.2 comma 1 lettera c) della legge regionale 1/2005, sentito l'Ufficio territoriale dell'Agenzia di Parma, individua e allestisce spazi idonei ad ospitare la Di.COMA.C., se istituita

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### 5.3. UFFICIO SICUREZZA TERRITORIALE E PROTEZIONE CIVILE DI PARMA

*Autorità idraulica*

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Si tiene aggiornato sulla situazione meteo-idrogeologica e idraulica in atto e prevista attraverso la consultazione dei dati resi disponibili da ARPAE-SIMC CF e dal gestore e ne valuta i possibili effetti
	Segue l'evoluzione dell'evento, mantenendo un flusso di comunicazioni con i Comuni, gestore, la Prefettura - UTG di Parma e l'Agenzia ARSTePC – Centro Operativo Regionale, in relazione all'evento stesso, alle condizioni del territorio e all'insorgere di eventuali criticità, fornendo supporto agli Enti Locali, se necessario
	Garantisce la reperibilità H24 del personale
	Riceve da Enti e strutture operative segnalazioni sull'insorgenza di eventuali criticità e/o danni, e ne dà comunicazione al COR.
	Riceve comunicazione dell'attivazione, sul territorio, dei Centri di Coordinamento e ne dà comunicazione al COR
	Attiva, se ritenuto necessario o su richiesta degli Enti e Strutture Operative del territorio, il volontariato di Protezione Civile per il supporto alle attività di presidio territoriale e/o assistenza alla popolazione e ne informa il COR
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Predisporre, se ritenuto necessario, l'apertura della sala operativa territoriale H24 secondo le proprie modalità organizzative, dandone comunicazione al COR
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
	Fornisce supporto agli Enti Locali, alla Prefettura - UTG di Parma, ai Centri di Coordinamento locali, ove attivati, ed alle strutture preposte al soccorso tecnico urgente in raccordo con la Sala operativa regionale

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<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
	Valuta l'eventuale attivazione tempestiva di azioni di contrasto in relazione all'evoluzione della situazione in atto
	Mantiene i contatti con i Comuni interessati ai fini dell'attivazione dei relativi piani di emergenza
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	Valuta le informazioni fornite dal gestore e attua le azioni di competenza in relazione ai fenomeni in atto ed in particolare le azioni previste dalla fase di <b>PREALLERTA RISCHIO DIGA</b>
	Attiva, se ritenuto necessario, il presidio territoriale dandone comunicazione al COR.
<b>ALLERTA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Fornisce supporto agli Enti Locali, alla Prefettura - UTG di Parma, ai Centri di Coordinamento locali, ove attivati, ed alle strutture preposte al soccorso tecnico urgente in raccordo con la Sala operativa regionale

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#### 5.4. ARPAE-SIMC - CENTRO FUNZIONALE

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Attiva, se ritenuto necessario, il presidio H24
	Garantisce la funzionalità della rete di monitoraggio idro-pluviometrica regionale e della rete radar meteorologica regionale
	Comunica tempestivamente al gestore e all'Agenzia ARSTePC – Centro Operativo Regionale informazioni sull'eventuale insorgenza o evoluzione rapida e non prevista di un fenomeno meteorologico avverso
	Garantisce supporto al gestore e al sistema regionale di protezione civile relativamente all'evoluzione degli eventi idro-meteorologici in atto
	Effettua l'aggiornamento degli scenari d'evento attesi sulla base delle informazioni ricevute dal gestore e dalla situazione meteo prevista e in atto.
<b>VIGILANZA RINFORZATA</b>	Azioni della fase di <b>PREALLERTA</b> , se non già attuate
<b>PERICOLO</b>	Azioni della fase di <b>VIGILANZA RINFORZATA</b> , se non già attuate
<b>COLLASSO</b>	Azioni della fase di <b>PERICOLO</b> , se non già attuate
	Supporta le strutture competenti nella valutazione degli scenari di allagamento
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	Valuta le informazioni fornite dal gestore e attua le azioni di competenza in relazione ai fenomeni in atto ed in particolare le azioni previste dalla fase di <b>PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	Mantiene il presidio h24

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## 5.5. PREFETTURA - UTG DI PARMA

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Si tiene aggiornata sull'evoluzione della situazione in atto e prevista, mantenendo un flusso di comunicazioni costante con l'Ufficio territoriale dell'Agenzia di Parma e il COR
	Verifica la disponibilità delle risorse statali
	Riceve comunicazione dell'attivazione dei Centri Operativi Comunali (COC) e ne garantisce il supporto mediante l'eventuale partecipazione degli enti e delle amministrazioni dello Stato
	Mantiene un flusso di comunicazioni con i Comuni in relazione all'evolversi dell'evento in atto e alle condizioni del territorio
	Riceve comunicazioni dell'insorgere di eventuali criticità dai soggetti interessati presenti sul proprio territorio di competenza e adotta, coordinandosi con l'Ufficio territoriale dell'Agenzia di Parma, ogni misura atta a fronteggiare l'evento in atto
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Convoca, se ritenuto necessario, il Centro Coordinamento Soccorsi (CCS), anche in composizione ristretta
	Valuta l'attivazione e l'impiego di risorse statali per il supporto alle attività operative e di controllo del territorio e per l'attuazione delle misure preventive e di soccorso a supporto degli Enti Locali e ai Centri di coordinamento locali
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
	Riceve comunicazioni dell'insorgere di criticità dai soggetti interessati presenti sul proprio territorio di competenza (es: Comuni, Agenzia, Vigili del Fuoco, Forze dell'ordine) e adotta ogni misura necessaria a garantire l'efficacia degli eventuali interventi di soccorso tecnico urgente e di assistenza alla popolazione.
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>

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	Assume, nell'immediatezza dell'evento, la direzione unitaria dei servizi di emergenza da attivare a livello provinciale, ai sensi dell'art. 9 del DLgs n. 1/2018, coordinandosi con il Presidente della Giunta Regionale, con l'Agenzia ARSTePC e l'Ufficio territoriale dell'Agenzia di Parma
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	Azioni della fase di <b>PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>

### 5.6. COMUNI (E UNIONI DI COMUNI)

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Verificano l'organizzazione interna e l'attivazione delle procedure operative rispetto ai contenuti della propria pianificazione di emergenza, in relazione a tale tipologia di rischio
	Verificano la disponibilità del volontariato comunale per l'eventuale attivazione e l'efficienza logistica
	Allertano le strutture tecniche e di polizia urbana del Comune, anche al fine del concorso all'attività di presidio territoriale di propria competenza e alle eventuali attività di assistenza alla popolazione
	Attivano, se ritenuto necessario, il Centro Operativo Comunale (COC), garantendo il raccordo con le altre strutture di coordinamento eventualmente attivate, dandone comunicazione all'Ufficio territoriale dell'Agenzia di Parma e alla Prefettura - UTG di Parma
	Attivano, se ritenuto necessario, il presidio territoriale, dandone comunicazione all'Ufficio territoriale dell'Agenzia di Parma e alla Prefettura - UTG di Parma
	Garantiscono l'informazione alla popolazione e a tutti coloro che risiedono e/o svolgono attività in aree a rischio sull'evento in atto e



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	<p>sulle necessarie misure di autoprotezione da adottare per i fenomeni previsti</p> <p>Attivano, se necessario, il proprio gruppo comunale e le organizzazioni locali di volontariato convenzionate, dandone comunicazione all'Ufficio territoriale dell'Agenzia di Parma, per il supporto alle attività di gestione dell'evento</p> <p>Predispongono ogni azione necessaria all'eventuale evacuazione delle aree a rischio, compresa la movimentazione di opportuni mezzi utili all'allontanamento della popolazione interessata</p> <p>Mantengono un flusso di comunicazioni con l'Ufficio territoriale dell'Agenzia di Parma in relazione all'evolversi dell'evento in atto e alle condizioni del territorio, segnalando tempestivamente allo stesso ed alla Prefettura - UTG di Parma l'insorgenza di eventuali criticità</p>
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Attivano, se non precedentemente attivato, il Centro Operativo Comunale (COC), garantendo il raccordo con le altre strutture di coordinamento attivate
	Partecipano con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
	Richiedono, se necessario, all'Ufficio territoriale dell'Agenzia di Parma il concorso del volontariato, mezzi e materiali, per eventuali attività di pronto intervento e assistenza alla popolazione
	Ordinano l'annullamento di manifestazioni di carattere pubblico e la chiusura delle strutture a fruizione pubblica a rischio di allagamento.
	Ordinano la chiusura al transito delle strade comunali e dei ponti di propria competenza che possono essere interessati dall'evento
	Predispongono ogni attività necessaria per avvisare la popolazione residente in aree a rischio dell'imminente pericolo ed <b>emettono ordinanza di evacuazione</b>
	Allertano la popolazione che risiede e/o svolge attività in aree non soggette ad evacuazione, comunicando le necessarie misure di salvaguardia da adottare.
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>

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	Comunicano aggiornamenti sull'evento in atto alla popolazione e a tutti coloro che svolgono attività in aree a rischio
	Mantengono informati la Prefettura - UTG di Parma e l'Ufficio territoriale dell'Agenzia di Parma in merito alle misure attuate per fronteggiare l'evento in corso e a salvaguardia dell'incolumità pubblica e privata
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
	Assumono tutte le ulteriori iniziative atte alla salvaguardia dell'incolumità pubblica e privata, dandone comunicazione alla Prefettura - UTG di Parma e all'Ufficio territoriale dell'Agenzia di Parma
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Attivano, se ritenuto necessario, il monitoraggio e la sorveglianza dei punti critici individuati nel Piano di protezione civile ed individuati diversamente
	Comunicano a tutti coloro che risiedono e/o svolgono attività in aree a rischio le necessarie misure di salvaguardia da adottare
	<b>In considerazione dell'evoluzione dell'evento e in relazione agli incrementi <math>\Delta Q</math> di portata scaricata e all'eventuale raggiungimento della <math>Q_{AMAX} = 30 \text{ m}^3/\text{s}</math> notificati dal gestore:</b>
	Rafforzano l'impiego delle risorse della propria struttura e del volontariato per eventuali attività di pronto intervento e assistenza alla popolazione
	Predispongono ogni attività necessaria per avvisare la popolazione residente in aree a rischio dell'imminente pericolo e, se necessario, per emettere un'ordinanza di sgombero
	Garantiscono alla popolazione aggiornamenti sull'evento in atto e l'eventuale insorgenza di condizioni critiche sul territorio
Adottano le misure necessarie a fronteggiare l'evento in atto e ne danno comunicazione alla Prefettura - UTG di Parma e all'Ufficio territoriale dell'Agenzia di Parma, valutando l'eventuale chiusura di strade e ponti comunali potenzialmente interessati dall'evento	

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## 5.7. PROVINCIA DI PARMA

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Verifica l'organizzazione interna e l'attivazione delle procedure operative rispetto ai contenuti della propria pianificazione di emergenza, in relazione all'evento in corso
	Allerta le proprie strutture tecniche di vigilanza e presidio sulla rete stradale di competenza
	Verifica la funzionalità delle infrastrutture, l'efficienza dei mezzi e la disponibilità di materiali atti a fronteggiare i fenomeni previsti
	Comunica l'insorgenza di eventuali criticità che coinvolgono la rete stradale ed il territorio di competenza, informando l'Ufficio territoriale dell'Agenzia di Parma, la Prefettura - UTG di Parma ed i Centri di Coordinamento locali, ove attivati
	Attiva, se ritenuto necessario, il presidio territoriale della rete stradale di competenza con particolare attenzione ai tratti critici potenzialmente interessati dall'evento
	Assicura, in caso di necessità, la vigilanza sulle strade provinciali eventualmente interrotte, avvalendosi del personale, dei mezzi e della segnaletica stradale a disposizione
	Se necessario, richiede all'Ufficio territoriale dell'Agenzia di Parma il concorso del volontariato a supporto delle attività di presidio territoriale di propria competenza
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Garantisce la reperibilità H24 e il presidio continuo della rete stradale e delle infrastrutture di competenza potenzialmente interessate dall'evento
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
	Emette <b>ordinanza per la chiusura al transito</b> dei ponti e delle strade che possono essere interessate dall'evento
	Provvedono, coordinandosi anche con le Polizie Locali, ad attivare i cancelli sulla viabilità di competenza, al fine di interdire l'accesso alle aree a rischio e a presidiare i percorsi alternativi

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<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
	Presidia la rete stradale e di competenza, in particolare sui tratti critici, secondo le modalità previste dalle proprie procedure operative
	Comunica tempestivamente ai Comuni interessati l'insorgere di eventuali criticità che coinvolgano la propria rete stradale e le strutture di proprietà
	Attua le misure preventive e/o necessarie a contrastare l'eventuale insorgenza di condizioni critiche sul territorio (limitazioni della viabilità) e ne dà comunicazione alla Prefettura - UTG di Parma e all'Ufficio territoriale dell'Agenzia di Parma
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
	Mette in atto tutte le misure necessarie a contrastare l'evento e ne dà comunicazione alla Prefettura - UTG di Parma e all'Ufficio territoriale dell'Agenzia di Parma
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>

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**5.8. AIPO – Agenzia Interregionale per il Fiume Po** (Autorità idraulica per il fiume Taro dal ponte di Fornovo Taro e fino al fiume Po)

<b>RISCHIO DIGA</b>	
	Si tiene aggiornato sull'evolversi della situazione idrometeorologica in atto presso il Centro Funzionale della Regione ARPAE-SIMC CF, mantiene un flusso di comunicazioni con l'Agenzia ARSTePC – Centro Operativo Regionale, l'Ufficio territoriale dell'Agenzia di Parma e con i Centri di Coordinamento locali, qualora attivati
	Attiva, se ritenuto necessario, il presidio territoriale idraulico secondo i propri regolamenti interni, dandone comunicazione al COR, all'Ufficio territoriale dell'Agenzia di Parma e agli altri enti interessati
	Richiede all'Ufficio territoriale dell'Agenzia di Parma, se ritenuto necessario, l'attivazione del volontariato di Protezione Civile per il supporto alle attività di presidio territoriale idraulico
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Fornisce supporto tecnico agli Enti Locali e partecipa alle attività dei Centri di Coordinamento locali, ove attivati
	Mantiene un flusso di comunicazioni, in particolare rispetto agli effetti al suolo e alle criticità, con l'Ufficio territoriale dell'Agenzia di Parma, il COR e i Centri di Coordinamento locali, ove attivati
	Comunica tempestivamente alla Prefettura - UTG di Parma ed ai Comuni interessati l'eventuale insorgere di situazioni di rischio per la popolazione e per i beni ed attua tutte le misure necessarie a fronteggiare le situazioni di criticità
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
	Garantisce le attività di presidio territoriale idraulico secondo quanto previsto dai propri regolamenti interni.

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	Richiede all'Ufficio territoriale dell'Agenzia di Parma, se ritenuto necessario, l'attivazione e/o il rafforzamento del volontariato di Protezione Civile per il supporto alle attività di presidio territoriale idraulico ed eventuali risorse aggiuntive per fronteggiare l'evento in atto
<b>COLLASSO</b>	Azioni della fase di <b>PERICOLO</b> , se non già attuate
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	Azioni della fase di <b>PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>

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## 5.9. VIGILI DEL FUOCO

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Verificano l'organizzazione interna e l'attivazione delle procedure operative, in relazione all'evento in corso
	Comunicano tempestivamente a Prefettura - UTG di Parma e all'Ufficio territoriale dell'Agenzia di Parma eventuali segnalazioni di criticità in atto pervenute al comando Provinciale.
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Dispongono l'invio delle squadre disponibili sul territorio per fronteggiare l'evento in atto
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
	Richiedono all'Ufficio territoriale dell'Agenzia di Parma, anche per il tramite della Prefettura, se ritenuto necessario, l'attivazione del volontariato di protezione civile per il supporto all'attività di pronto intervento
	Forniscono supporto al COR se richiesto dall'Agenzia
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
	Dispongono immediatamente l'invio delle squadre disponibili sul territorio per fronteggiare l'evento in atto e per le eventuali attività di soccorso tecnico urgente
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>

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### 5.10. SANITÀ

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Verifica l'organizzazione interna e l'attivazione delle procedure operative, in relazione all'evento in corso
	La Direzione Sanitaria di Parma informa le strutture sanitarie sul territorio d'interesse dell'avvenuta preallerta e ne condivide le strategie d'intervento
	Segnala tempestivamente alle Prefettura - UTG di Parma eventuali criticità in atto
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Fornisce supporto al COR, se richiesto dall'Agenzia STPC



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### 5.11. ENTI GESTORI DI RETI ED INFRASTRUTTURE

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Verificano l'organizzazione interna e l'attivazione delle procedure operative, in relazione all'evento in corso
	Verificano la funzionalità delle reti e delle infrastrutture, l'efficienza dei mezzi e la disponibilità di materiali atti a fronteggiare l'evento in corso
	Garantiscono l'informazione necessaria all'utenza al fine di tutelare la pubblica incolumità
	Attivano, se necessario, il presidio territoriale, assicurando l'attività di pronto intervento, nel caso si verificano situazioni di crisi, per il ripristino della funzionalità delle reti e delle infrastrutture
	Mantengono informati la Prefettura - UTG di Parma, i Sindaci interessati e l'Ufficio territoriale dell'Agenzia di Parma sulle attività di pronto intervento e di messa in sicurezza delle reti e infrastrutture
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Richiedono all'Ufficio territoriale dell'Agenzia di Parma, se ritenuto necessario, l'attivazione del volontariato di Protezione Civile per il supporto alle attività di pronto intervento
	Partecipano con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
	Rafforzano il presidio territoriale assicurando l'attività di pronto intervento, nel caso si verificano situazioni di crisi, finalizzata al ripristino della funzionalità delle reti e delle infrastrutture
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
	Provvedono al ripristino, nel più breve tempo possibile, delle reti e delle infrastrutture in gestione avvalendosi del personale e dei mezzi a disposizione

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<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Rafforzano il presidio territoriale, assicurando attività di pronto intervento, nel caso si verificano situazioni di crisi, atte a ripristinare la funzionalità delle reti e delle infrastrutture
	Provvedono al ripristino, nel più breve tempo possibile, delle reti e delle infrastrutture in gestione avvalendosi del personale e dei mezzi a disposizione

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## 5.12. SETTORE DIFESA DEL TERRITORIO, AREA GEOLOGIA, SUOLI E SISMICA

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Si tiene aggiornato sulla situazione meteo, idrogeologica, idraulica e ne valuta gli effetti, garantendo il flusso di comunicazioni con COR e ARPAE-SIMC CF
	Concorre alla valutazione della criticità conseguente ai fenomeni meteo idrogeologici, idraulici insieme ad ARPAE-SIMC CF e all'Agenzia ARSTePC
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Garantisce, se richiesto, il supporto all'Agenzia ARSTePC, per la valutazione dello scenario di evento in atto e per le attività di presidio territoriale idrogeologico
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
<b>COLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Fornisce supporto al COR, se richiesto dall'Agenzia ARSTePC

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### 5.13. COORDINAMENTO PROVINCIALE E ASSOCIAZIONI DI VOLONTARIATO

<b>RISCHIO DIGA</b>	
<b>PREALLERTA</b>	Verifica l'organizzazione interna e l'attivazione delle procedure, in relazione all'evento in corso
	Verifica l'efficienza dei mezzi e la disponibilità di materiali atti a fronteggiare l'evento in corso
	Informa i referenti delle proprie organizzazioni di volontariato e delle squadre specialistiche
	Fornisce, se attivato, supporto all'Agenzia ARSTePC e agli Enti Locali preposti per le eventuali attività di presidio territoriale
<b>VIGILANZA RINFORZATA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	Fornisce, se attivato, supporto all'Agenzia ARSTePC e agli Enti Locali per le attività di assistenza alla popolazione e di salvaguardia della pubblica incolumità
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato
<b>PERICOLO</b>	<b>Azioni della fase di VIGILANZA RINFORZATA, se non già attuate</b>
<b>COLLASSO</b>	<b>Azioni della fase di PERICOLO, se non già attuate</b>
<b>RISCHIO IDRAULICO A VALLE</b>	
<b>PREALLERTA</b>	<b>Azioni della fase di PREALLERTA RISCHIO DIGA</b>
<b>ALLERTA</b>	<b>Azioni della fase di PREALLERTA, se non già attuate</b>
	In considerazione dell'evoluzione dell'evento in atto attiva in maniera progressiva le azioni previste dalle fasi di <b>VIGILANZA RINFORZATA</b> e <b>PERICOLO RISCHIO DIGA</b>
	Garantisce, con squadre specializzate, mezzi e materiali, il concorso operativo agli enti preposti al presidio territoriale

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	Fornisce, se attivato, supporto all'Agenzia ARSTePC e agli Enti Locali per le attività di assistenza alla popolazione e di salvaguardia della pubblica incolumità
	Partecipa con un proprio rappresentante alle attività del Centro Coordinamento Soccorsi (CCS) se attivato

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## 6. INFORMAZIONE ALLA POPOLAZIONE

I rischi legati agli scenari d'evento possono comportare la necessità di implementare o modificare il sistema di segnaletica monitoria e di dispositivi ottici e/o acustici di segnalazione già presenti sul territorio e, in generale, di tutto il sistema di informazione alla popolazione.

Si sottolinea l'importanza della comunicazione preventiva e della formazione in ordine a questa specifica tipologia di rischio e l'opportunità di verificare l'efficacia delle misure di emergenza effettuando periodiche esercitazioni.

Particolare attenzione dovrà essere posta, inoltre, nella predisposizione di un adeguato sistema di informazione (preventiva, in corso d'evento e a fine evento) in caso di possibile **collasso dello sbarramento**.

Tale sistema, oltre che delle caratteristiche del territorio e degli elementi esposti, dovrà tener conto dei **tempi di propagazione dell'onda di piena** lungo il corso d'acqua per la valutazione dei tempi disponibili per l'allertamento, l'informazione e l'eventuale evacuazione dei soggetti coinvolti.

Qui di seguito si riportano alcuni dati estratti dallo studio di ENEL – "Calcolo dell'onda di sommersione conseguente all'ipotetico collasso dell'opera di ritenuta ai sensi della Circolare del Ministero dei Lavori Pubblici n. 352 del 4 dicembre 1987" (luglio 1993); i valori riportati sono indicativi poiché variazioni morfologiche della quota del piano campagna possono aver modificato il dato su velocità e profondità del battente idraulico. Inoltre, come già specificato nel paragrafo 3.1 "Aree interessate dagli scenari di evento", in merito alla metodologia alla base della definizione dello scenario di collasso sono state rilevate criticità significative. Per questo, i tempi indicati nello scenario devono essere considerati puramente indicativi.

Sezione n.	Località	Comune	Tempo hh:mm	Portata m <sup>3</sup> /s	Altezza m	Velocità m/s
1	Diga	Tornolo	00:00:00	3800	12.27	7.96
3	Strinabecco	Tornolo	00:01:27	1417	5.56	17.03
5	Case Simonini	Tornolo	00:05:00	373	3.34	7.52
6	S. Maria del Taro	Tornolo	00:09:08	186	2.44	2.98
7	Molino del Passo/Case Lazzini	Tornolo	00:15:43	140	1.73	3.08
10	Molino Nuovo	Tornolo	00:35:36	76	1.96	2.99
11	Case Fazzi	Tornolo	00:43:52	64	2.21	2.93

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15	Strinata	Tornolo - Bedonia	1:04:41	45	1.65	2.09
17	Pontestrambo	Tornolo - Bedonia	1:21:22	35	1.41	2.12
19	Case Baste (ultima sezione)	Tornolo - Bedonia	1:38:12	31	1.37	2.06

Tabella 1. Sezioni e dati estrapolati dallo studio di ENEL "Diga di S. Maria del Taro – calcolo dell'onda di sommersione conseguente all'ipotetico collasso dell'opera di ritenuta ai sensi della circolare del ministero dei lavori pubblici n. 352 del 4 dicembre 1987" (luglio 1993)

La tabella seguente è invece indicativa dei tempi di propagazione di un'onda di piena dovuta alla massima portata dei rilasci della diga, effettuati attraverso gli organi di scarico.

Sezione n.	Località	Comune	Tempo hh:mm	Portata m <sup>3</sup> /s	Altezza m	Velocità m/s
1	Diga	Tornolo	00:00:32	8.49	0.66	2.65
B	Strinabecco	Tornolo	00:11:09	8.13	0.79	2.34
10	Casello	Tornolo	00:32:10	7.30	0.86	1.47
H	S. Maria del Taro	Tornolo	00:38:47	7.16	0.77	1.42
14	Molino del Passo	Tornolo	00:51:58	6.89	1.02	1.46
21	Molino Nuovo	Tornolo	01:45:51	5.95	0.79	1.22
23	Case Fazzi	Tornolo	02:02:37	5.78	1.04	1.15
30	Strinata	Tornolo - Bedonia	02:48:42	5.38	1.06	1.40
T	Pontestrambo	Tornolo - Bedonia	03:37:27	5.21	0.53	1.05
37	Isorelli	Tornolo - Bedonia	03:42:53	5.19	0.48	1.34
44	Foppiano	Tornolo - Bedonia	04:18:24	5.05	0.82	1.52
51	Piane di Carniglia	Tornolo - Bedonia	05:02:09	4.89	0.78	1.34

Tabella 2. Sezioni e dati estrapolati dallo studio di ENEL "Calcolo del profilo delle onde di piena artificiali a valle della diga di Santa Maria del Taro" (Maggio 1999)

Si ricorda che l'attività di informazione alla popolazione rientra nelle dirette responsabilità del Sindaco (art.12 della L. 265/1999 e s.m.i.) ed è esplicitamente menzionata tra le attività di prevenzione non strutturale di protezione civile di cui all'art. 2 del DLgs. 1/2018.

Le modalità di informazione alla popolazione, le buone pratiche di comportamento in relazione ai diversi scenari e la programmazione di apposite esercitazioni sul territorio sono oggetto della

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sezione dedicata ai rischi connessi alla presenza della diga dei piani di protezione civile comunali o intercomunali dei Comuni territorialmente interessati.

Nell'ambito della predetta attività, particolare rilevanza dovrà essere assegnata alla indicazione delle aree ove possano manifestarsi fenomeni di alluvionamento - anche a mezzo di **segnaletica monitoria o dispositivi ottici e/o acustici di segnalazione** - nonché alla diffusione di buone pratiche di comportamento.

A tal fine i Sindaci dovranno censire con accuratezza le aree ove possano manifestarsi criticità e sensibilizzare la popolazione ad evitare lo stazionamento nei pressi di punti a rischio come ponti, rive di corsi d'acqua in piena, sottopassi stradali, scantinati, etc...

Nondimeno, si ritiene opportuno non solo prevedere un ampio e sistematico coinvolgimento della popolazione, a mezzo di incontri, assemblee pubbliche, conferenze, etc., ma anche verificare l'efficacia delle misure di emergenza effettuando periodiche esercitazioni.



## 7. RIFERIMENTI NORMATIVI

### 7.1. NORMATIVA E PROVVEDIMENTI NAZIONALI

- D.P.R. n°1363/1959 (G.U. del 24/03/1960, n. 72) (Regolamento per la progettazione, costruzione ed esercizio degli sbarramenti di ritenuta- dighe e traverse. Parte I: Norme generali per la progettazione, costruzione ed esercizio)
- Decreto 24 marzo 1982, n. 44 del Ministero dei LL.PP. (G.U. del 4/08/1982, n. 212 suppl.) (Norme tecniche per la progettazione e la costruzione delle dighe di sbarramento), in sostituzione della Parte II del D.P.R. n°1363/1959
- Circolare del Ministero dei LL.PP. n° 1125 del 28/08/1986 (Sistemi d'allarme e segnalazione di pericolo per le dighe di ritenuta di cui al Regolamento approvato con D.P.R. n° 1363/1959)
- Circolare del Ministero dei LL.PP. n° 352 del 4/12/1987 (G.U. 19/1/1988 n.14) (Prescrizioni inerenti l'applicazione del Regolamento sulle dighe di ritenuta approvato con DPR n° 1363/1959)
- D.L. n° 507/1994, convertito con Legge n° 584/1994 (testo coordinato in G.U. 31/10/1994 n. 255) (Misure urgenti in materia di dighe)
- Circolare PCM/DSTN/2/22806 del 13/12/1995 (G.U. 7/3/96 n. 56) (Disposizioni attuative in materia di dighe)
- Allegato alla Circolare PCM/DSTN/2/22806 del 13/12/1995 (G.U. 7/3/1996 n. 56) (Raccomandazioni per la mappatura delle aree a rischio di inondazione conseguente a manovre degli organi di scarico o ad ipotetico collasso delle dighe)
- Circolare PCM/DSTN/2/7019 del 19/03/1996 (G.U. 2/05/1996 n. 101) (Disposizioni inerenti l'attività di protezione civile nell'ambito dei bacini in cui siano presenti dighe)
- Circolare PCM/DSTN/2/7311 del 07/04/1999 (Legge n° 584/1994. Competenze del Servizio nazionale dighe. Precisazioni)
- Direttiva P.C.M. 27/02/2004 e successiva modifica del 25/02/2005 (G.U. 11/3/2004 n. 59 suppl. 39 e G.U. del 9/03/2005) "Indirizzi operativi per la gestione organizzativa e funzionale del sistema di allertamento nazionale, statale e regionale per il rischio idrogeologico ed idraulico ai fini di protezione civile"
- Direttiva P.C.M. del 8/02/2013 (G.U. n. 97 del 26 aprile 2013) "Indirizzi operativi per l'istituzione dell'Unità di Comando e Controllo del bacino del fiume Po ai fini del governo delle piene, nonché modifiche ed integrazioni alla Direttiva del Presidente del Consiglio dei Ministri del 27 febbraio 2004 e successive modificazioni"
- Direttiva P.C.M. del 8/07/2014 (G.U. n. 256 del 4/11/2014) "Indirizzi operativi inerenti l'attività di protezione civile nell'ambito dei bacini in cui siano presenti grandi dighe"
- Decreto del Direttore Generale per le dighe e le infrastrutture idriche ed elettriche - Ministero delle Infrastrutture e dei Trasporti del 30/10/2015

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- Decreto Legislativo n° 1 del 02/01/2018 “Codice della protezione civile”
- “Indicazioni operative per l’individuazione dei Centri operativi di coordinamento e delle Aree di emergenza” del Dipartimento di Protezione Civile, adottate il 31 marzo 2015, ai sensi dell'articolo 5, comma 5, della legge n. 401/2001
- “Indirizzi per la predisposizione dei piani di protezione civile ai diversi livelli territoriali” Direttiva della Presidenza del Consiglio dei Ministri del 30 aprile 2021

## **7.2. NORMATIVA E PROVVEDIMENTI REGIONALI E PROVINCIALI**

- **Legge regionale 7 febbraio 2005, n. 1** “Norme in materia di Protezione Civile e Volontariato. Istituzione dell’Agenzia regionale di Protezione Civile”
- **Deliberazione della Giunta Regionale n. 1166 del 21 giugno 2004**, recante “Approvazione delle linee guida per la predisposizione dei piani di emergenza provinciali e comunali”
- Delibera di Giunta n.728 del 21 maggio 2018 “Prime disposizioni in attuazione del Decreto Legislativo 2 gennaio 2018, N.1 Codice della Protezione Civile in materia di pianificazione dell’emergenza”
- Deliberazione di Giunta Regionale n. 1439 del 10 settembre 2018 “Approvazione del documento “Indirizzi per la predisposizione dei piani comunali di protezione civile”
- **Delibera di Giunta Regionale n. 1761 del 30 novembre 2020** “Aggiornamento del “Documento per la gestione organizzativa e funzionale del sistema regionale di allertamento per il rischio meteo idrogeologico, idraulico, costiero ed il rischio valanghe, ai fini di protezione civile” di cui alla Delibera di Giunta Regionale n. 962/2018.”
- **Decreto Prefettizio della Prefettura - U.T.G. di Parma n. 66150 del 20/10/2022** di approvazione del Documento di Protezione Civile della Diga di Santa Maria del Taro

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## 8. ALLEGATI

1. Modello per le comunicazioni
2. Elenco dei soggetti destinatari delle comunicazioni
3. Elementi esposti
4. Strutture operative
5. Aree logistiche per l'emergenza
6. Materiali e mezzi
7. Cartografia

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## **Allegato 1. Modello per le comunicazioni**

Il modello riportato di seguito rappresenta il modello utilizzato dal gestore e dall’Agenzia STPC per comunicare l’attivazione, la prosecuzione o il rientro di una fase di allerta per rischio diga o rischio idraulico a valle.

Tale modello è contenuto nel Documento di Protezione Civile della Diga di cui all’Allegato 1.

Di seguito si riportano le sezioni di cui è composto il documento ed il documento stesso.

### **Sezione 1. Elenco dei destinatari**

### **Sezione 2. Tipologia di rischio e fase di allerta**

In questa sezione viene indicata la Fase di Allerta oggetto della comunicazione e il relativo stato (attivazione, prosecuzione o termine della fase di allerta).

In caso di SISMA viene barrata la casella apposita della Sezione 2.

### **Sezione 3. Valori attuali**

In questa sezione sono riportati i valori dell’invaso al momento della comunicazione:

- Il livello dell’invaso
- la portata scaricata o che si prevede di scaricare
- l’ora presumibile dell’apertura degli scarichi, se previsti o in atto
- i quantitativi di pioggia caduta, in caso di evento meteo
- altri dati significativi

### **Sezione 4. Valori di riferimento**

In questa sezione sono riportate le caratteristiche principali della diga ed i valori di riferimento per l’attivazione delle fasi di allerta

### **Sezione 5. Motivo dell’attivazione della fase - descrizione dei fenomeni in atto - provvedimenti assunti - motivo del rientro della fase**

Qui vengono riportati:

- la natura dei fenomeni in atto e la loro prevedibile evoluzione
- i provvedimenti già assunti per controllarne e contenerne gli effetti
- il motivo del rientro della fase di allerta

### **Sezione 6. Esito dei controlli**

In caso di **sisma**, in questa sezione è riportata l’entità dei danni “lievi o riparabili” o dei comportamenti anomali individuati a seguito dei controlli e delle valutazioni tecniche dell’Ingegnere Responsabile.

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ALLERTA IN APPLICAZIONE DEL DOCUMENTO DI PROTEZIONE CIVILE	DATA	ORA	NUMERO
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1	(1) Destinatari	TEL	(FAX)	PEC - MAIL
	Prefettura - UTG di Xxxxxx			
	Ufficio Tecnico Dighe di Xxxxxxx			
	Agenzia Regionale per la sicurezza territoriale e la Protezione Civile			
	ARSTePC - Ufficio territoriale dell'Agenzia di Xxxxx			
	ARPAE-SIMC CF			
	Dipartimento Protezione Civile			
	Comune di			
Comune di				

(1) barrare la casella di interesse

2	"RISCHIO DIGA" (barrare se per SISMA <input type="checkbox"/> )				"RISCHIO IDRAULICO A VALLE"			
	FASE	Attivazione	Prosecuzione	Fine	FASE	Attivazione	Prosecuzione	Fine
	Preallerta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preallerta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Vigilanza rinforzata	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Allerta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pericolo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	COLLASSO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

3	Valori attuali	
	Quota invaso attuale	msm
	Pioggia totale da inizio evento	mm
	Intensità pioggia in atto	mm/h
	Eventuali altri dati significativi	
	Portata scaricata	m <sup>3</sup> /s
	di cui da soglie libere	m <sup>3</sup> /s
	di cui da scarichi presidia da scarichi presidiati	m <sup>3</sup> /s
	Ora prevista apertura scarichi	hh:mm
	Portata che si prevede di scaricare	m <sup>3</sup> /s
	di cui ...	m <sup>3</sup> /s
	di cui ...	m <sup>3</sup> /s
	Ora prevista raggiungimento fase successiva	hh:mm

4	Valori di riferimento	
	Quota autorizzata	msm
	Quota massima di regolazione	msm
	Quota massima raggiungibile in occasione eventi di piena	msm
	Quota di massimo invaso	
	Portata massima transitabile in alveo Q <sub>Amax</sub>	m <sup>3</sup> /s
	Portata di attenzione Q <sub>min</sub>	m <sup>3</sup> /s
	Soglie incrementali ΔQ per portate scaricate superiori alla Q <sub>min</sub>	m <sup>3</sup> /s
	Soglia minima di portata per la comunicazione (rischio idraulico a valle)	m <sup>3</sup> /s
	Soglie incrementali per portate scaricate inferiori alla Q <sub>min</sub> (rischio idraulico a valle)	m <sup>3</sup> /s

5	Note	MOTIVO DELL'ATTIVAZIONE DELLA FASE E SINTETICA DESCRIZIONE DEI FENOMENI IN ATTO E DEI PROVVEDIMENTI ASSUNTI/MOTIVO RIENTRO DALLA FASE
6		ESITO DEI CONTROLLI ESEGUITI IMMEDIATI A SEGUITO DEL SISMA DI MAGNITUDO _____

Nome Cognome	Funzione	Firma

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## **Allegato 2.** **Elenco dei soggetti destinatari delle comunicazioni del PED**

L’Agenzia, secondo la direttiva PCM 8 luglio 2014, è responsabile dell’allertamento degli Enti e delle strutture operative indicate nel PED, al fine dell’attuazione delle attività di competenza previste dal Piano. L’Agenzia ARSTePC della Regione Emilia-Romagna trasmette le comunicazioni ricevute dal Gestore agli enti e alle strutture operative indicate di seguito.

Ciascun soggetto destinatario delle comunicazioni delle fasi di allertamento per rischio diga e rischio idraulico a valle è responsabile di trasmettere eventuali variazioni dei recapiti all’Agenzia regionale per la sicurezza territoriale e la protezione civile.

- Dipartimento nazionale di Protezione Civile
- Prefettura - UTG di Parma
- Ufficio territoriale dell’Agenzia di Parma (USTPC – Parma)
- Centro Funzionale ARPAE SIMC (Servizio Idro-Meteo- Clima)
- Area Geologia, Suoli e Sismica
- AIPO Ufficio Operativo di Parma
- Provincia di Parma
- Comuni di Tornolo (PR) e Bedonia (PR)
- Unione dei Comuni Valli Taro e Ceno
- Direzione Regionale Vigili del Fuoco
- Comando Provinciale dei Vigili del Fuoco di Parma
- Comando Regionale Carabinieri Forestale Emilia-Romagna
- Gruppo Provinciale Carabinieri Forestali Parma
- 118 Emilia-Romagna / Centrale operativa Emilia Ovest
- Coordinamento del Volontariato di Parma
- Montagna 2000 S.p.A.
- Socogas S.p.A.
- Carbotrade Gas S.r.l.
- ENEL Distribuzione SPA - Unità Territoriale Rete Emilia-Romagna

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### **Allegato 3. Elementi esposti**

Come già anticipato nel paragrafo 3.2, risultano essere presenti elementi esposti solamente per lo scenario di ipotetico collasso dello sbarramento della diga.

Si demanda ai Comuni e ai piani comunali di protezione civile il compito di verificare, integrare e specificare i dati relativi alle attività localizzate nelle aree a rischio.

#### **SCENARIO DI IPOTETICO COLLASSO**

<b>COMUNE</b>	<b>ELEMENTO ESPOSTO</b>
<b>TORNOLO</b>	<ul style="list-style-type: none"> <li>• 38 Edifici residenziali (43 residenti)</li> <li>• 10 Edifici commerciali (ristorante, bar, .....)</li> <li>• 11 Depositi</li> <li>• 1 Centrale idroelettrica (Strinabecco)</li> <li>• 1 edificio per il culto</li> <li>• 1 edificio privato che ospita le Poste</li> </ul>
<b>BEDONIA</b>	<ul style="list-style-type: none"> <li>• 1 edificio residenziale (1 residente)</li> </ul>

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#### **Allegato 4. Strutture operative**

Le strutture operative elencate nella tabella seguente risultano fruibili al verificarsi di entrambi gli scenari oggetto di questo piano. E' in via di definizione l'accordo con la Prefettura di Parma per la sede della SOPI/Sala operativa CCS presso il CUP di Parma.

<b>TIPOLOGIA</b>	<b>STRUTTURA OPERATIVA</b>
<b>CCS - Centro Coordinamento Soccorsi</b>	<p>Il Centro Coordinamento Soccorsi (CCS) si riunisce di norma presso Palazzo Rangoni, sede della Prefettura - UTG di Parma, strada Repubblica 39, Parma</p> <p>Il CCS, se convocato, si avvale della Sala Operativa Provinciale presso la Prefettura stessa o presso il CUP Parma</p>
<b>CUP – Centro Unificato Provinciale di Protezione Civile</b>	<p>Il CUP ha sede in strada del Taglio 6, Parma</p>
<b>SOPI - Sala Operativa Provinciale Integrata per ambito provinciale</b>	<p>La SOPI ha sede presso il Centro Unificato di Protezione Civile, strada del Taglio 6, Parma</p>
<b>COC - Centro Operativo Comunale</b>	<ul style="list-style-type: none"> <li>• Comune di Tornolo - c/o Municipio, Via Promenade 1, Tornolo</li> <li>• Comune di Bedonia - c/o Municipio, Piazza Caduti della Patri 1, Bedonia</li> </ul>
<b>COR – Centro Operativo Regionale</b>	<p>Il COR ha sede presso l'Agenzia regionale per la sicurezza territoriale e la protezione civile della Regione Emilia-Romagna – Viale Silvani, 6 - Bologna</p>
<b>VIGILI DEL FUOCO</b>	<ul style="list-style-type: none"> <li>• Comando Provinciale di Parma – via Chiavari, 11, Parma</li> <li>• Distaccamento volontario Vigili del Fuoco Borgo Val di Taro - Via A. De Gasperi, 2, Borgo Val di Taro</li> </ul>
<b>CARABINIERI</b>	<ul style="list-style-type: none"> <li>• Comando Provinciale Carabinieri di Parma – strada della Fonderie 10, Parma</li> <li>• Carabinieri Comando Compagnia Borgo Val di Taro - Via Luigi Molinari, 2, Borgo Val di Taro</li> <li>• Stazione di Tornolo Santa Maria del Taro – strada Privata 1, Santa Maria del Taro</li> <li>• Stazione di Bedonia - Via Divisione Julia 8, Bedonia</li> </ul>



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<b>118 / Sanità</b>	<ul style="list-style-type: none"> <li>• Centrale Operativa 118 Emilia Ovest - strada del Taglio, 8/B – Parma</li> <li>• Emergenza territoriale 118 Parma – via Don Tincati, 3 – ospedale di Vaio - Fidenza</li> <li>• Ospedale “Santa Maria” di Borgo Val di Taro – via Benefattori, 12 – Borgo Val di Taro</li> <li>• Azienda Ospedaliera di Parma – Via Gramsci, 14 – Parma</li> </ul>
<b>CARABINIERI FORESTALI</b>	<p>I comandi più vicini sono:</p> <ul style="list-style-type: none"> <li>• Comando Provinciale di Parma – strada Melloni, 4 - Parma</li> <li>• Stazione di Borgo Val di Taro – via Tasola – Borgo Val di Taro</li> </ul>
<b>VOLONTARIATO DI PROTEZIONE CIVILE</b>	<p><b>Comitato provinciale del volontariato:</b></p> <ul style="list-style-type: none"> <li>• Sede di Parma – strada del Taglio 6 - Parma</li> <li>• Magazzino di Parma – strada del Taglio 6 - Parma</li> </ul> <p><b>Associate locali:</b></p> <ul style="list-style-type: none"> <li>• Gruppo comunale Volontari Protezione Civile Tornolo, Via Promenade, 1 – Tornolo</li> </ul> <p><b>Associazioni locali non associate:</b></p> <ul style="list-style-type: none"> <li>• Croce Verde Santa Maria del Taro, Piazza Marconi Guglielmo, 27 - 43059 Santa Maria Del Taro (PR)</li> </ul>

### FUNZIONI DI SUPPORTO (CCS)

COMPOSIZIONE CCS c/o Prefettura - UTG di Parma

*A seguito dell'approvazione dell'accordo con la Prefettura di Parma per la costituzione del CCS e della SOPI ai sensi della D.G.R. 1103/2022, saranno aggiornate le funzioni della SOPI ai sensi della Direttiva P.C.M. 30/04/2021.*

FUNZIONE DI SUPPORTO		ENTE
<b>F1</b>	Tecnico-Scientifica	Ufficio territoriale dell'Agenzia di Parma (ARSTePC)
		Tirreno Power S.p.A.
		AIPO
		ARPAE CF
		Provincia di Parma

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	Pianificazione	Ufficio territoriale dell'Agenzia di Parma (ARSTePC)
<b>F2</b>	Soccorso Sanitario Urgente	Centrale Operativa 118 Emilia Ovest
		Emergenza Territoriale 118 Parma
	Prevenzione sanitaria, profilassi sanitaria e veterinaria	AUSL di Parma - Dipartimento di sanità pubblica – Distretto Valli Taro e Ceno - Servizio Igiene e Sanità Pubblica – Borgotaro
		AUSL di Parma - Dipartimento di sanità pubblica – Sanità pubblica veterinaria - SOT Distretto Valli Taro e Ceno
Coordinamento ospedali	AUSL di Parma (Ospedali di Fidenza e Borgo Val di Taro)	
	Azienda Ospedaliero-Universitaria di Parma	
<b>F3</b>	Mass-media e informazione	Prefettura - UTG di Parma
<b>F4</b>	Volontariato	Comitato provinciale degli Organismi di Volontariato della Protezione civile di Parma
		ANPAS
		CRI
<b>F5</b>	Materiali e Mezzi	ARSTePC
<b>F6</b>	Trasporto, Circolazione e Viabilità	Provincia di Parma - Servizio Viabilità
		ANAS S.p.A.
		Comune di Tornolo
		Comune di Bedonia
<b>F7</b>	Telecomunicazioni	Telecom s.p.a.
		Lepida S.p.A.
<b>F8</b>	Servizi Essenziali	Azienda/e di gestione dei servizi pubblici relativamente al territorio coinvolto

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<b>F9</b>	Censimento danni a persone e cose	Ufficio territoriale dell'Agenzia di Parma (ARSTePC)
		Comune di Tornolo
		Comune di Bedonia
		ARSTePC
<b>F10</b>	Strutture Operative S.a.R.	Questura di Parma
		Comando Provinciale dei Carabinieri di Parma
		Comando Provinciale Guardia di Finanza
		Sezione Polizia Stradale
<b>F11</b>	Enti Locali	Provincia di Parma
		Comune di Tornolo
		Comune di Bedonia
<b>F12</b>	Materiali Pericolosi	Comando Provinciale dei Vigili del Fuoco di Parma
		AUSL di Parma - Dipartimento di sanità pubblica
		ARPAE - Sede di Parma
<b>F13</b>	Assistenza alla popolazione	Comune di Tornolo
		Comune di Bedonia
		Comitato provinciale degli Organismi di Volontariato della Protezione civile di Parma
		CRI
		ANPAS
<b>F14</b>	Pianificazione e Coordinamento Centri Operativi	Prefettura - UTG di Parma

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### Allegato 5. Aree logistiche per l'emergenza

Nelle successive tabelle si riportano le aree logistiche di supporto fruibili nel caso si verifici lo scenario di ipotetico collasso:

#### SCENARIO DI IPOTETICO COLLASSO

COC DI RIFERIMENTO	AREE LOGISTICHE
<b>COC di Tornolo</b>	<p><b>Aree di attesa:</b> Parcheggio adiacente Stazione Carabinieri – S. Maria del Taro (area di attesa n.3 da piano comunale di PC); piazza incrocio strada Privata/via de Terry fronte civici 16 e 18 (area indentificata per i soli fini di questo piano)</p> <p><b>Centri di assistenza:</b> Ex scuola di Santa Maria del Taro, via Casello, 4; Capannone Proloco di Santa Maria del Taro, Via Mezzano.</p> <p><b>Aree di assistenza:</b> Campo sportivo del Mezzano (Santa Maria del Taro); Nuovo Campo sportivo dal Taro (Santa Maria del Taro).</p> <p><b>Area di Ammassamento soccorritori e risorse:</b> Area Verde adiacenze cimitero Comune di Bedonia (valenza sovracomunale), Viale delle Rimembranze – Bedonia.</p>
<b>COC di Bedonia</b>	<p><b>Area di Ammassamento soccorritori e risorse:</b> Area Verde adiacenze cimitero Comune di Bedonia (valenza sovracomunale), Viale delle Rimembranze – Bedonia.</p>

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### Allegato 6. Materiali e mezzi

Si riporta di seguito un elenco dei principali mezzi e attrezzature a disposizione del Volontariato al momento della stesura del presente piano. Il riferimento aggiornato rimane sempre l'applicativo STARP dell'Agenzia regionale Sicurezza territoriale e Protezione civile.

LOCALIZZAZIONE	TIPOLOGIA MATERIALE
<b>Assistenza Pubblica Borgotaro-Albareto</b>	1 Torre Faro 3kVA (4 fari da 500W) su carrello senza targa (benzina) 1 Generatore corrente 6 kVA; su rimorchio stradale AC 80035 1 Elettropompa sommergibile 6 L/s; su rimorchio stradale AC80035 1 Motopompa 13,5 L/s (o 800 lt/min); su rimorchio stradale AC80035 1 Motopompa 45 L/s autoad. da acque sporche (benzina); su rimorchio stradale AC 80035 1 Motopompa fango su rimorchio stradale AC80035 1 Gruppo Elettrogeno 10 kVA; 8 kW 1 Autocarro Cassonato con gru piccola con cisterna 4.000 lt 1 Pulmino trasporto cose 1 Rimorchio stradale (13 q.li) per rischio idraulico 1 Rimorchio stradale (13 q.li) 1 Rimorchio stradale 1 Fuoristrada cassonato
<b>GCPC Gruppo Comunale Protezione Civile ALBARETO</b>	1 Fuoristrada cassonato 1 Fuoristrada
<b>GCPC Gruppo Comunale Protezione Civile BEDONIA</b>	2 Fuoristrada 1 Fuoristrada cassonato 2 Rimorchio stradale
<b>GCPC Gruppo Comunale Protezione Civile BORGOTARO</b>	1 Fuoristrada
	Modulo AIB (300 L); su fuoristrada DR079GF Pro Civ Arci Modulo AIB (600 L) alta prevalenza; su Land Rover 130 ZA142WK Gruppo elettrogeno Gruppo elettrogeno 30 kVA; 24 kW 5 Gruppo illuminante 3 Torre Faro 5kVA (4 fari da 500W) su carrello senza targa (benzina) 3 Torre Faro (4 FARI DA 500 W), su carrello senza targa (3kW) 1 Torre Faro 20kVA / 16kW (carrellata); su rimorchio stradale AD24094 1 Elettropompa 5 L/s 2 Elettropompa sommergibile 6 L/s; su rimorchio stradale 1 Motopompa 26 L/s autoad. da acque sporche (benzina); (o 1600 lt/min) su rimorchio stradale 1 Motopompa 16 L/s autoad. da acque sporche (benzina)

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<p>1 Motopompa 40 L/s autoad. da acque sporche (benzina); su rimorchio stradale</p> <p>1 Motopompa 45 L/s autoad. da acque sporche (benzina); su rimorchio stradale</p> <p>1 Motopompa 6 L/s autoad. da fango (benzina, rossa); su rimorchio stradale</p> <p>1 Motopompa 6 L/s autoad. da fango (diesel, blu)</p> <p>1 Motopompa 36 L/s da acque fluide (diesel); su rimorchio stradale AF15159</p> <p>1 Motopompa 1,5 L/s (o 80 lt/min)</p> <p>2 Motopompa 80 L/s; su rimorchio stradale</p> <p>1 Idropulitrice</p> <p>1 Serbatoio per carburante (910 lt), trasporto gasolio</p> <p>1 Serbatoio per carburante (380 lt), trasporto benzina</p> <p>1 Insacchettatrice</p> <p>1 generatore CV13 su carrello</p> <p>1 generatore 13CV su carrello</p> <p>1 Gruppo elettrogeno 40kw per cucina mobile; su furgone</p> <p>2 Gruppo elettrogeno 30 kVA</p> <p>2 Motopompa 38 L/s autoad. (benzina); su carrello</p> <p>1 Elettropompa 6 L/s autoad. da fango (elettrica)</p> <p>1 MODULO I1 - Motopompa 45 L/s autoad. (benzina) con accessori; su carrello</p> <p>1 MODULO I1 - Elettropompa sommergibile 6 L/s con accessori; su carrello</p> <p>1 MODULO I1 - Generatore corrente 230V 5kVA 50Hz; su carrello XA131PM</p> <p>1 MODULO I1 - Palo telescopico con 4 lampade a led 220V 100W; su carrello</p> <p>1 Modulo AIB bassa prevalenza; su fuoristrada</p> <p>2 Torre faro portatile ricaricabile di prima emergenza</p> <p>1 Idropulitrice; con motore HondaGX320 a benzina</p> <p>1 Autocarro furgonato (cella frigo)</p> <p>1 Autocarro uso speciale - CUCINA MOBILE</p> <p>1 Fuoristrada (7 posti)</p> <p>2 Fuoristrada cassonato</p> <p>1 CARRELLO BEVANDE CALDE</p> <p>1 Fuoristrada</p> <p>5 Pulmino 9 posti</p> <p>3 Rimorchio OMC con Torre faro GMB</p> <p>1 pulmino trasporto cose</p> <p>2 Rimorchio stradale per trasporto torre faro; Effeti</p> <p>2 Rimorchio stradale per rischio idraulico; trasporto motopompa Viesse</p> <p>1 Rimorchio stradale per rischio idraulico</p> <p>1 Rimorchio stradale (750 kg) per rischio idraulico</p> <p>1 Terna gommata</p> <p>1 Gommone</p> <p>1 Imbarcazione alluminio</p> <p>2 Rimorchio stradale (per imbarcazioni)</p> <p>1 Autocarro cassonato furgonato uso officina</p> <p>1 Autocaravan (Motorhome)</p> <p>2 Autocarro cassonato</p> <p>1 Autocarro cassonato (4x4 con gru)</p> <p>1 Autocarro cassonato &lt;= 35 q.li (doppia cabina 7 posti)</p> <p>1 Autocarro cassonato (doppia cabina – 7 posti)</p> <p>1 Autocarro cassonato e telonato</p> <p>1 Autocarro furgonato (azione sequestro)</p> <p>2 Rimorchio stradale (13 q.li)</p> <p>1 Semirimorchio centinato (azione sequestro)</p> <p>1 Semirimorchio stradale</p> <p>1 Trattore x semirimorchio (Motrice 2 assi) (azione sequestro)</p> <p>2 Autocarro uso promiscuo 5 posti</p> <p>1 Rimorchio stradale trasporto cucina</p>
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	<ul style="list-style-type: none"><li>1 Rimorchio stradale</li><li>1 Pulmino Segreteria</li><li>1 Autocarro</li><li>2 Motore fuoribordo</li><li>1 Camion</li><li>2 Fuoristrada cassonato</li><li>1 MODULO I1 - Rimorchio stradale completo di modulo per l'emergenza idraulica</li><li>1 Autocarro 5 posti con cassone AIB e Idraulico</li><li>1 Fuoristrada</li><li>1 Fuoristrada con modulo AIB; con autopompa</li><li>1 Pulmino Trasporto persone</li><li>1 Automezzo NISSAN Navara</li></ul>
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### **Allegato 7. Cartografia**

Tabella riepilogativa delle cartografie allegate. Gli elementi rappresentati sono quelli indicati nel paragrafo 3.6.

<b>CARTA</b>	<b>COMUNI</b>	<b>SCALA</b>	<b>FORMATO STAMPA</b>
Inquadramento territoriale e scenari	Tornolo, Bedonia	1:25.000	A1
Elementi esposti – Carta di dettaglio – 13 Tavole	Tornolo, Bedonia	1:2.500	A3



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