



Emergency response P2C's

- What

4 november 2022
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Impression

<https://youtu.be/aLhgfTKUkgA>

WP 2 "Flood Emergency Respons"












- A. Levee inspection exercise
- B. Conducting/testing all kind of emergency measures
- C. Demolition (blowing up stuff)
- D. Preparing large scale european exercise

11 deliverables



This project has received funding from the Interreg 2 Seas programme 2014-2020 co-funded by the European Regional Development Fund under subsidy contract No [2S07-023]

Where are we now?

	Main topic	11 deliverables	Number in P2Cproposal	status
A	Expert exercises, levee surveillance and - monitoring	<ul style="list-style-type: none"> - Plan of action levee inspection - Levee inspection exercise - Inspection app   	D 2-2-1 D 2-2-3 D 2-2-4	Ready, now reporting
B	Emergency response exercises	<ul style="list-style-type: none"> - Survey on alternative dike closure strategies - Schemes for simulating levee failure - Evaluation report of emergency response exercise   	D 2-1-2 D 2-2-2 D 2-4-2	Ready and already reported
B	Emergency response exercises	<ul style="list-style-type: none"> - Pilot Breach defender 	D 2-1-1	Successful field test, now reporting
C	Breach Initiation	<ul style="list-style-type: none"> - Pilot controlled breach initiation 	D 2-3-1	Innovative demolition method has been developed, in January/February '23 to be tested full scale
D	Preparing large European exercise	<ul style="list-style-type: none"> - Full scale international emergency exercise - Action plan for prolonged collaboration on emergency response  	D 2-4-1 D 2-5-2	Ready, now reporting
E	Study of impact and effects of the results	<ul style="list-style-type: none"> - Report on finding risk perception and evacuation - Effect of WP2 on improvement effectiveness flood defense managers on emergency response 	D 2-5-1 State of Play	Ready and reported Update state of play is planned for last half year of project

Planning



extreme testing & in emergency exercises
parallel tests & with levee posts
far-stretched tests & with breaches and bresdefender
Irregularities & with real damages and damage measures
Simple failure tests & Levee inspection exercises

improvement
improvement
improvement
improvement
improvement

Mono-exercises
levee inspection
With observations

Multi-exercises
levee inspection

Multi-exercises
With levee inspection

International crisis exercise
With levee inspection

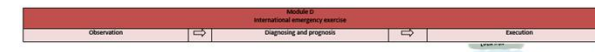
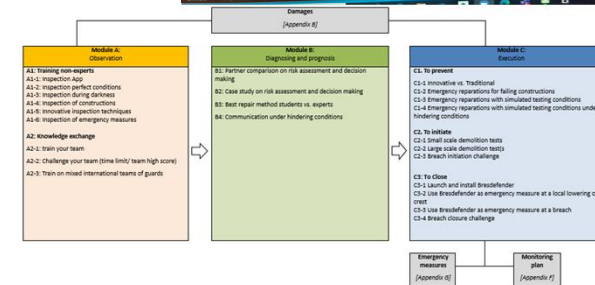
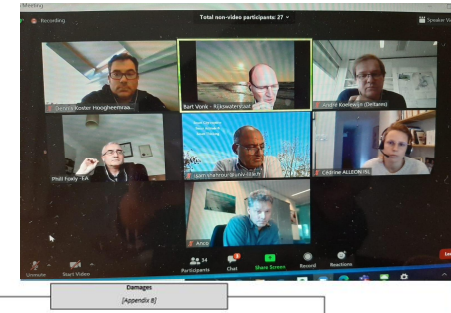
2020 co-funded by the European
Regional Development Fund under

Time

Results 2021

- Exercise plan as framework
- Many inspection exercises with growing complexity
- Three field tests emergency measures
- App2C tested
- studies for Bresdefender and demolition
- International workshop breach defender
- Report on State of play and Risk perception

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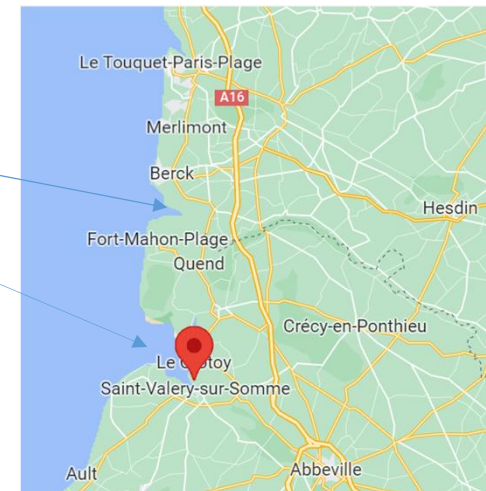


Results 2022

- Successful test bress defender
- Successful demonstration demolition technique levees
- 4 pilots mobile barriers (levee challenge)
- Many inspection exercises with growing complexity
- App2C available (in different languages)
- Full scale European exercise
- Framework and CoP “International Handbook Flood Risk Emergency Response IHFER”

What are we working towards

- Validating our findings in physical twin Dike Baie de Somme and Baie d'Authie November 23-25
- Demolition test breach initiation February 2023 at Ministry of Defence location
- Complete Knowledge Transfer Forms and story book
- Knowledge agenda for prolonged collaboration
- Update state of play



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Program winter 2021-2022

- 2 Webinars mobile barriers 29 May + end of June
- Inspection exercises field days
- Testing and improving APP2C including dashboard
- (Innovative) emergency measures
 - mobile barriers,
 - animal burrowing,
 - breach closure
 - (optional piping)
 - controlled breach initiation
- Update state of play and Risk perception study
- (organising) active involvement partners by the field activities

Year	Month	Week	Event
2021	June	24	16 June: Webinar about program 2022 with partners
2021	August	29	Optional create demonstration site "Hedwige uitlaat"
2021	Sept	36	Exercise Day 8 and 9 sept (Breaching / Height)
2021	October	40	Exercise Day 6 and 8 oct. (Breaching/ Height) 7 oct. Netwerkdag Watercrisis
2021	October	41	LSP 14-15 oct. 12 oct. CTW dag
2021	December	48	Exercise Day 3-6 dec (Animal Burrows)
2022	January	1	Exercise Day 4 jan (Animal Burrows)
2022	February	5	Exercise Day 2 - 3 feb (t.b.d.)
2022	March	9	Exercise Day 2-3 march (t.b.d.)
2022	April	13	Exercise Day 30 march (t.b.d.)
2022		20	Potential collaboration with breaching experiment
2022		36	Exercise Day 1-13 sept large international exercise
2022		39	DEADLINE Project
		Activit	Levee inspection exercise
			Pilot controlled breach Initiation
			Full scale international Emergency Exercise
			Exercise Day 4 and 5 nov
			Pilot breach defender

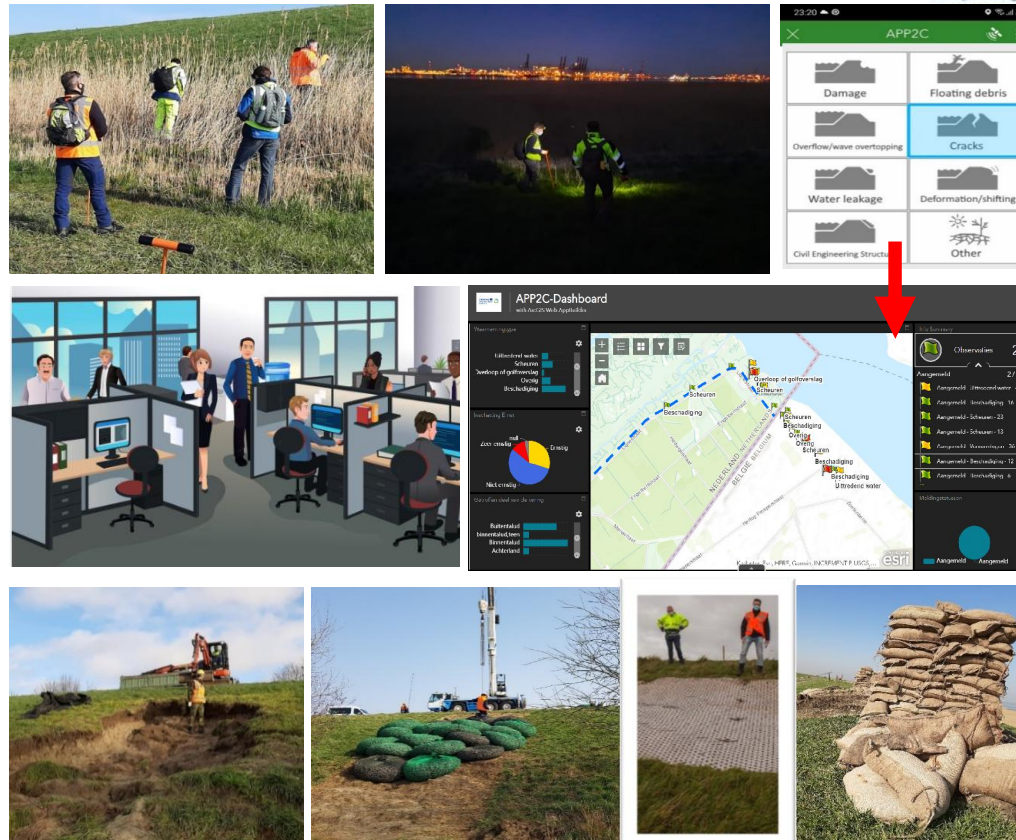
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LEVEE GUARDING

With Hansje Brinker



Hansje Brinker
NEW!!

Why and who



- In case of an emergency situation (high water or unsafe levee) or for inspection
- Because the levee organisation asks for it
- Can be carried out by experts or non experts from the levee organisation. Or by volunteers or just citizens walking their dog
- It can be carried out by non-experts because they can be asked or trained to report strange things on the levee: abnormalities.

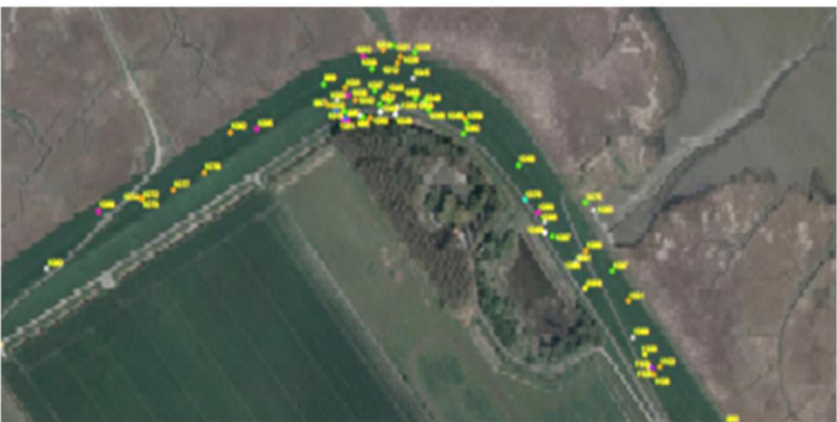


**EYES AND EARS
FOR THE LEVEE
ORGANISATION**





Observing (use of App2C) →



Diagnosis and prognosis
with dashboard at
levee/ expertpost/ office



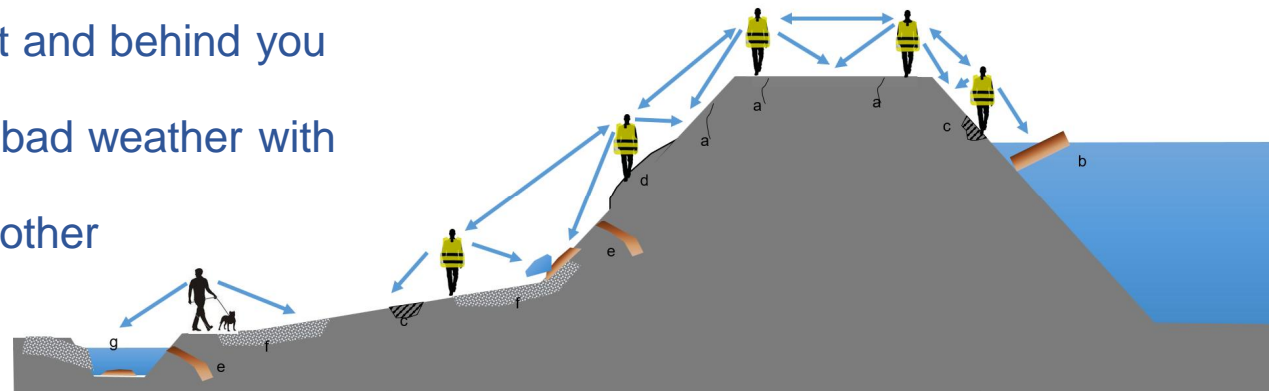
Emergency measures

Levee guarding

- Walk the levee in a group, in a line
- Look out for abnormalities, in front, next and behind you
- During daylight and mabe in the dark
- Prepared for nice weather. But also for bad weather with rain, storm and cold. It can be slippery.
- So the levee guards watch out for eachother

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Video people walking the levee



[Videos - OneDrive \(sharepoint.com\)](#)

What and how to register: App2C

- Register abnormalities in App2C and bring or send it to the levee organisation
- easy to use

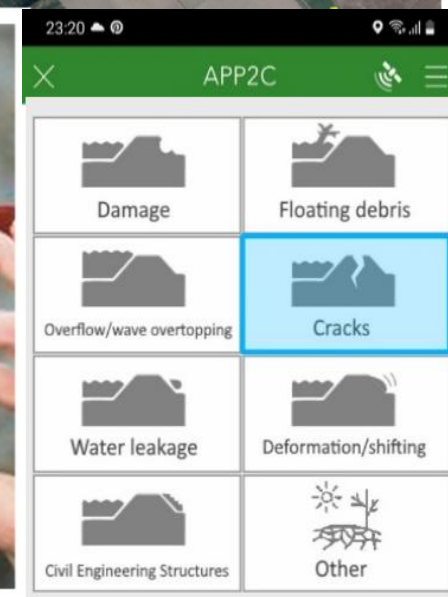
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[Hoge water veroorzaakt wel in sloot achter de dijk - YouTube](#)



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Observationtypes

Water leakage

Other

Damage

Cracks

Severity Estimate

Very serious

Serious

Not serio...

Affected part of the levee

Landward face

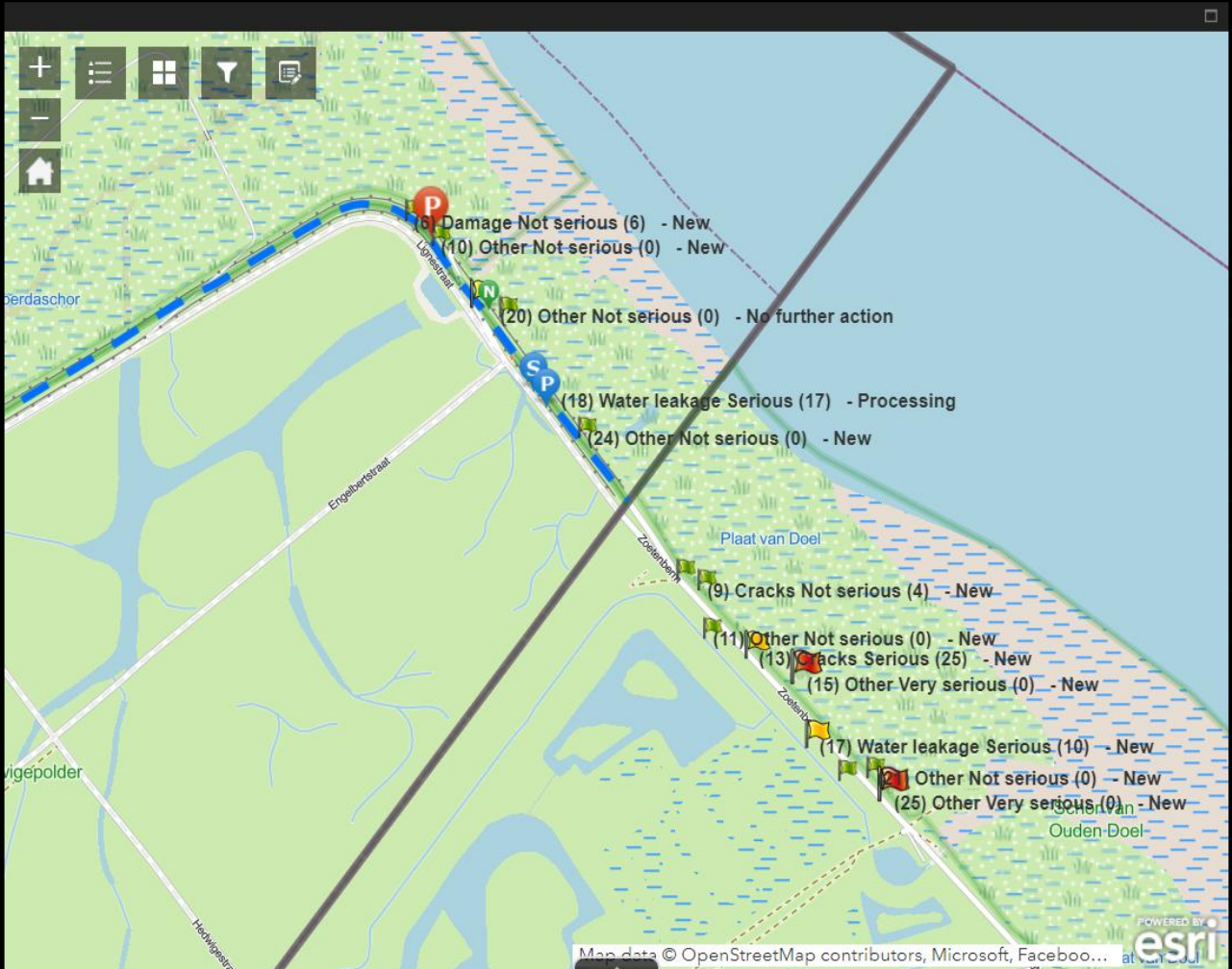
Floodplain

Exposed face

Ditch

Crest

Crest



Info Summary

Observations 19

New 15

25 - New - Score: 0

24 - New - Score: 0

23 - New - Score: 11

21 - New - Score: 0

19 - New - Score: 17

17 - New - Score: 10

15 - New - Score: 0

14 - New - Score: 0

13 - New - Score: 25

12 - New - Score: 15

Status

Signed off

Processing

No further...

New

What to bring and wear



- High visibility jacket or vest
- Suitable and sufficient clothing (f.e. cap, sunglasses)
- Sturdy shoes or boots
- Backpack
- Food and drinks
- First aid kit
- Phone (with App2C)
- Paperforms
- Portophone
- Protector
- Probe (to feel the levee)
- Infrared camera
- Life jacket with rope
- Flashlight



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Hansje Brinker NEW!!



International Handbook for Emergency Response to Flood Risk

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Why an international handbook on Flood Emergency Response?

Floods 2022:



Pakistan



The Washington Post (2022)



Australia

9News (2022)

Kentucky (USA)



Davies (2022)

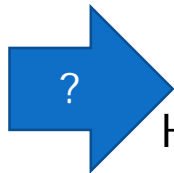
Overview of partners until now (but open invitation for all)

Coming to commitment by:

1. Adopting a role
2. Adopting a chapter
3. Name of main contact person

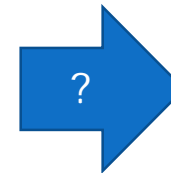
Coalition of Willing

The World Bank
Deltares (NL)
Royal HaskoningDHV (NL)
TU Delft (NL)
Chris VAN DUUREN (NL)
??



Coalition of Commitment

Rijkswaterstaat (NL)
Environment Agency (UK)
USACE (USA)
STOWA (NL)
HZ University of Applied Sciences (NL)
Upper Kiso-Gawa River Office, MLIT (JAP)
ISL Ingénierie (FR)
National Crisiscentre (BE)
Universität Siegen (GER)
Cracow University of Technology (PL)
HKV Lijn in Water (NL)



Firm Commitment

Firm commitment
to be achieved
before Christmas
by concrete and
signed
agreement

2. Table of Contents

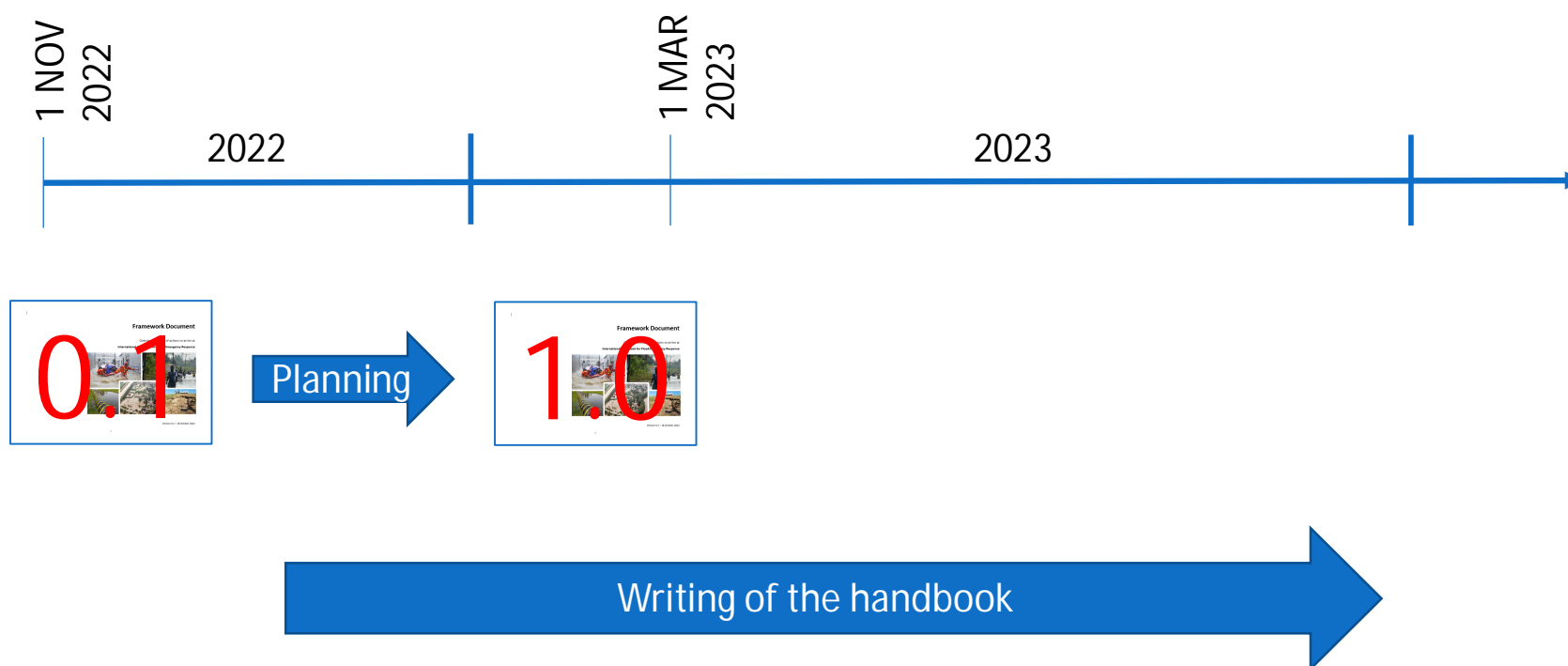


Ch	Title	Main topics
	Foreword / Acknowledgements	Start of initiative, Partners, thanks
1	Introduction	What, why handbook, target audience, how to read
2	Flood Emergency Response Management	Framework, organisation, policies, planning, communication
3	Readiness & Preparedness	Components of readiness and preparedness
4	Event & Crisis Management	Components of event & crisis management
5	Types of threats for flooding	River flooding, flooding from sea, pluvial flooding, glacial lake outbursts, lake floods, flash floods; implications for vulnerability
6	Types of flood Defences	Levees / dykes, dams, barriers, structures with flood defence function, demountable and temporary defences
7	Flood Inspections	Warnings, regular, damages, staffing, equipment
8	Failure Mechanisms	Understanding of flood defences, mechanisms, fragility curves
9	Response and techniques for interventions	Removing threat (divert, pump), enhanced flood defence (barrier, sandbags, etc), other measures such as evacuation
10	(Crisis) Communication: Community building & involvement	Awareness, response planning, communication, engagement
11	Technical equipment and tools	Software, hardware, netcentric working
12	Logistics & Implementation	Organisation, availability, needs, timing, constraints, planning
13	Health & Safety	PPE, protocols, standards
14	Reliability of techniques for intervention	Fault tree analyses
15	Learning from and helping each other	Exercises, Training, Education, EU Civil Protection Mechanism, community
16	Funding	Streamlining funding, how organised, typical (ranges of) values
17	Concluding Remarks	Future, innovation, Updating the handbook
	Glossary / Abbreviations / Literature / Appendices	

Are you missing anything?

Next step = annotated table of contents

3. Planning



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4. Form & style



Proposed form

To develop a web-based handbook (300-500 pages) with clickable links and boxes.

- Possibility to transform into a physical book
- Possibility to transform into a wiki type setting

What are your initial thoughts on this?

- Possibly in future interactive with e.g. chat functions? Handouts for in the field?



Item 4: Are we missing critical items?

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1. Critical success factors
2. Actions

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Emergency response

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Thanks

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