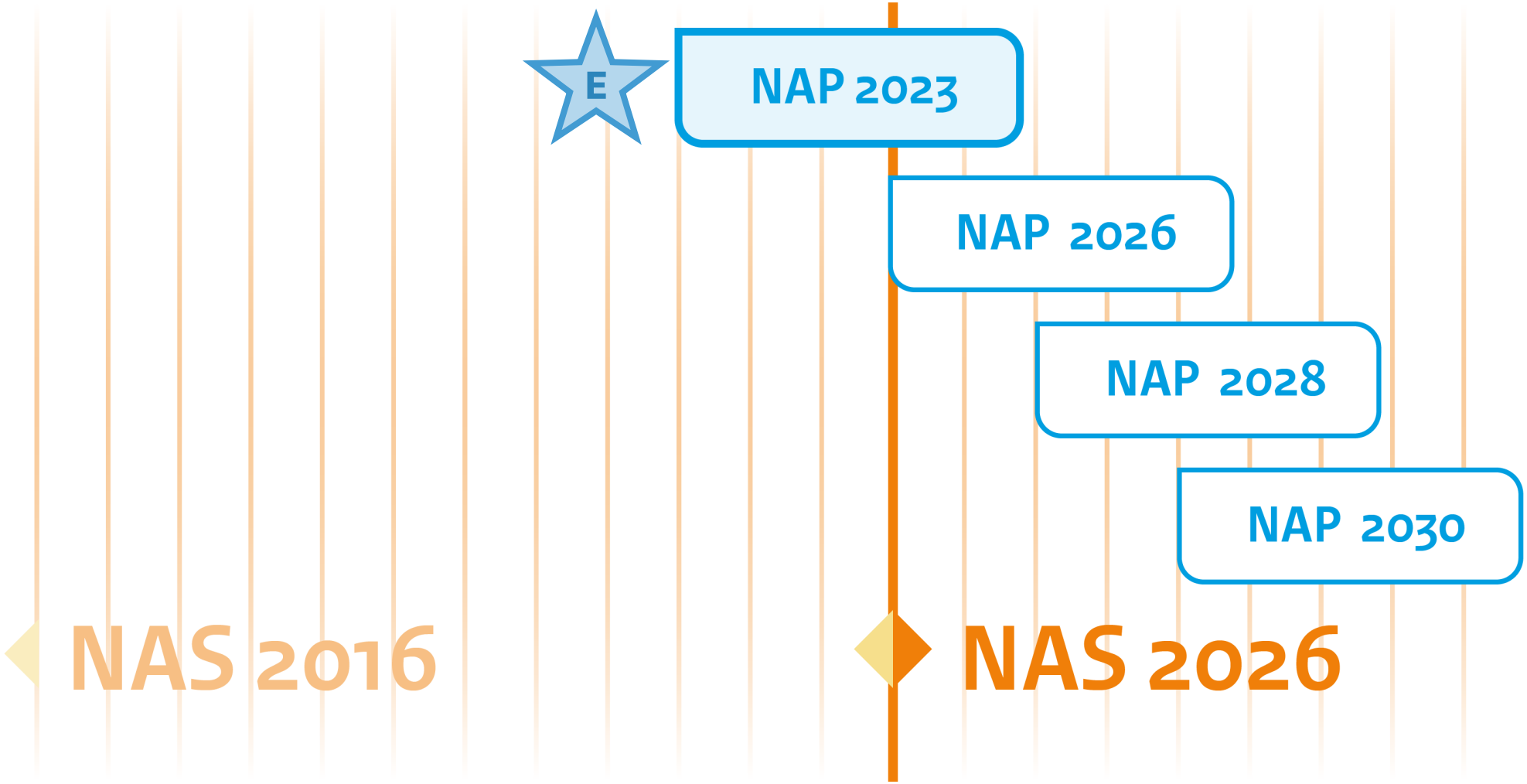
Ministerie van Infrastructuur
en Waterstaat

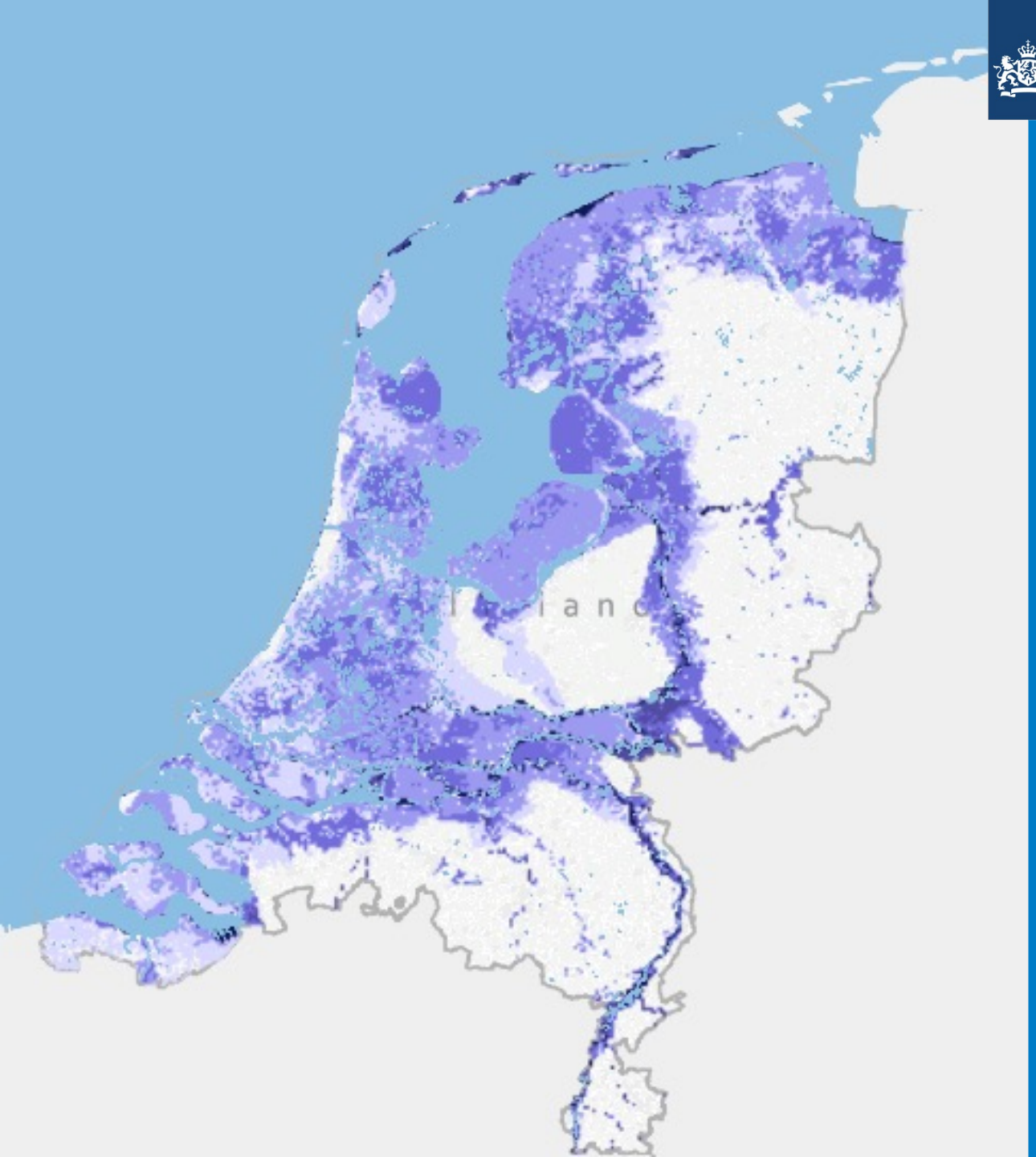
National adaptation strategy and plan (NAS & NAP)

23 April 2024

Chantal Oudkerk Pool

Time frames NAS and NAP





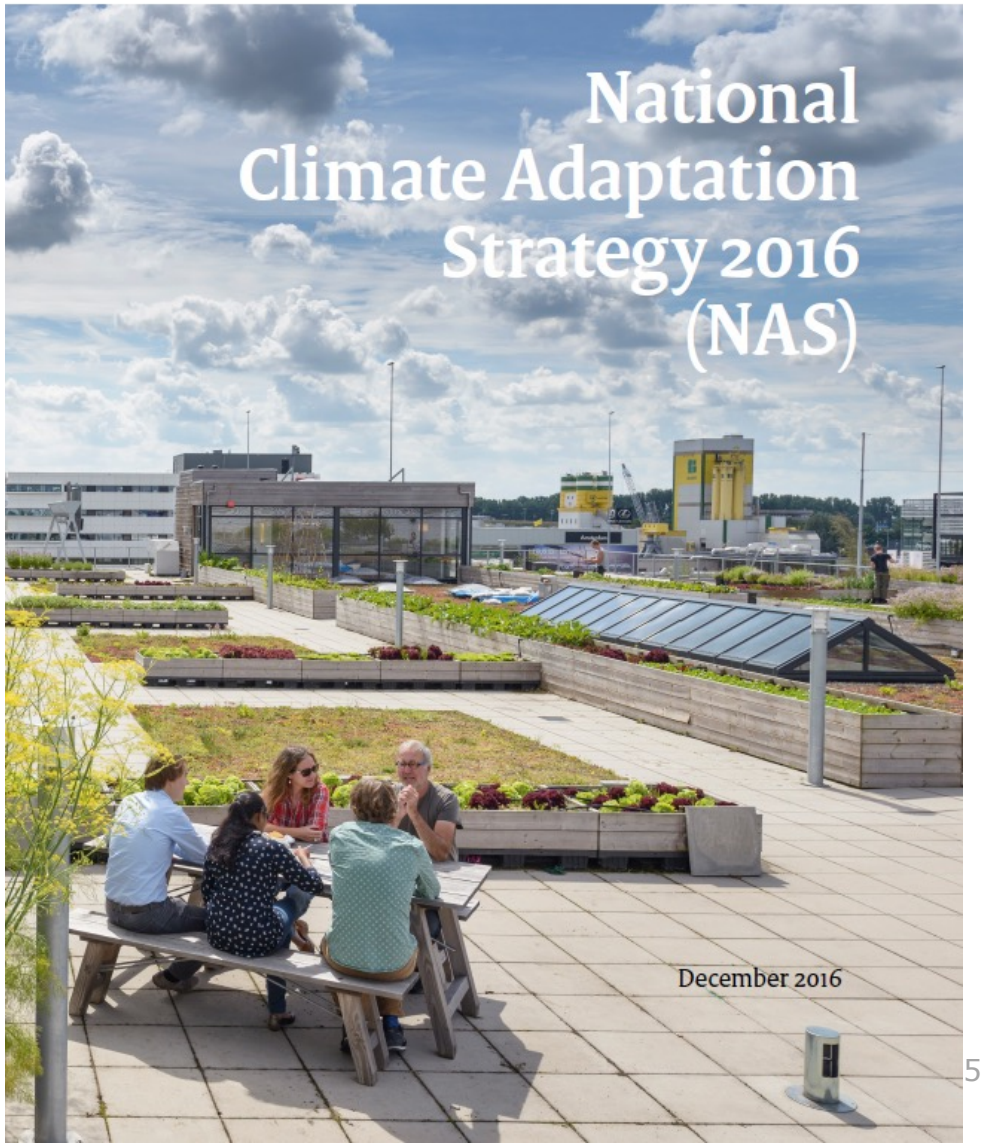
The Netherlands and Adaptation

- Delta to four major European rivers: Rhine, Meuse, Scheldt and Ems
- ~30% of the Netherlands below sea level
- 60% flood prone
- GDP: ~ EUR 800 bln
- High protection level
- 17.691 KM of flood defenses

NAS'16: priority risks

1. Greater heat stress
2. More frequent failure of vital systems
3. More frequent crop failures or other problems in the agricultural sector
4. Shifting climate zones
5. Greater health burden and loss of productivity
6. Cumulative effects

Adapting with ambition



NAS'16: Approach

1. Increase awareness of the necessity of climate adaptation
2. Encourage the implementation of climate adaptation measures
3. Develop and exploit the knowledge base
4. Address urgent climate risks
5. Embed climate adaptation within policy and legislation
6. Monitor the progress and effectiveness of the adaptation strategy.

NAS Evaluation findings (2022)

What is going well

Many stakeholders have become aware of their climate risks, identified measures, and started implementation

What we need

More specific goals and targets, an understanding of progress and effectiveness

Better governance and more implementation power

More attention to the impacts of climate change on humans, culture and nature

National Adaptation Plan (NAP’23)

National Adaptation plan: objective and scope

The NAP:

- Provides an **overview** of running and planned **adaptation actions,** including timeframes and project leads
- Identifies **priority areas** for additional action towards the next adaptation strategy

NAP 2023 summary

One goal

To accelerate climate resilience in the Netherlands

3 principles

Smarter
knowledge is accessible and applicable

More systemic
adaptation is mainstreamed into all policies and developments

More inclusive
adaptation for and by all

15 key challenges for adaptation

Water

- Well-protected against flooding
- Sponge cities
- Future-proof freshwater supply
- Good water quality

Agriculture, nature and the environment

- Climate resilient agriculture
- Climate resilient nature
- Well-protected hazardous industries

People and culture

- Heatproof cities
- Staying healthy in times of climate change
- Well-protected cultural heritage

Working and living

- Green climate-adaptive new developments
- Climate-resilient housing for all
- Green and healthy working landscapes
- Strong and resilient infrastructure
- Climate-adaptive waterways

5 priorities

1. **To develop concrete adaptation targets**
2. **To increase accessibility and applicability of knowledge products**
3. **To increase attention to climate justice**
4. **To mainstream adaptation into all policies and implementation**
5. **To explore opportunities to expand adaptation finance**

NAS’26: scoping ingredients

1. NAS’16 evaluation (2022)

2. National adaptation plan (2023)

3. European guidelines

4. Interdepart-mental workshop

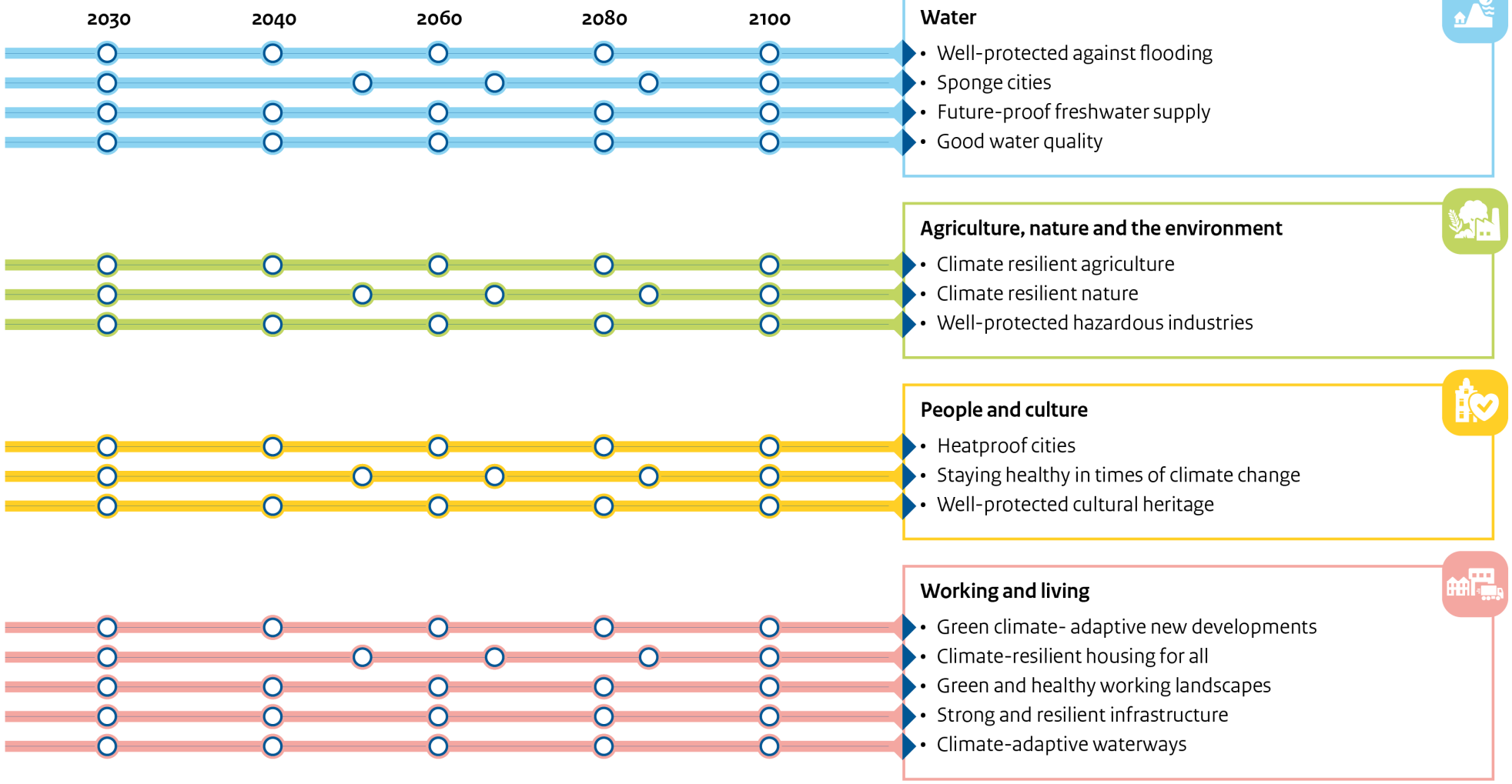
5. Survey among non-state stakeholders

6. Scientific Climate Council

Outcome

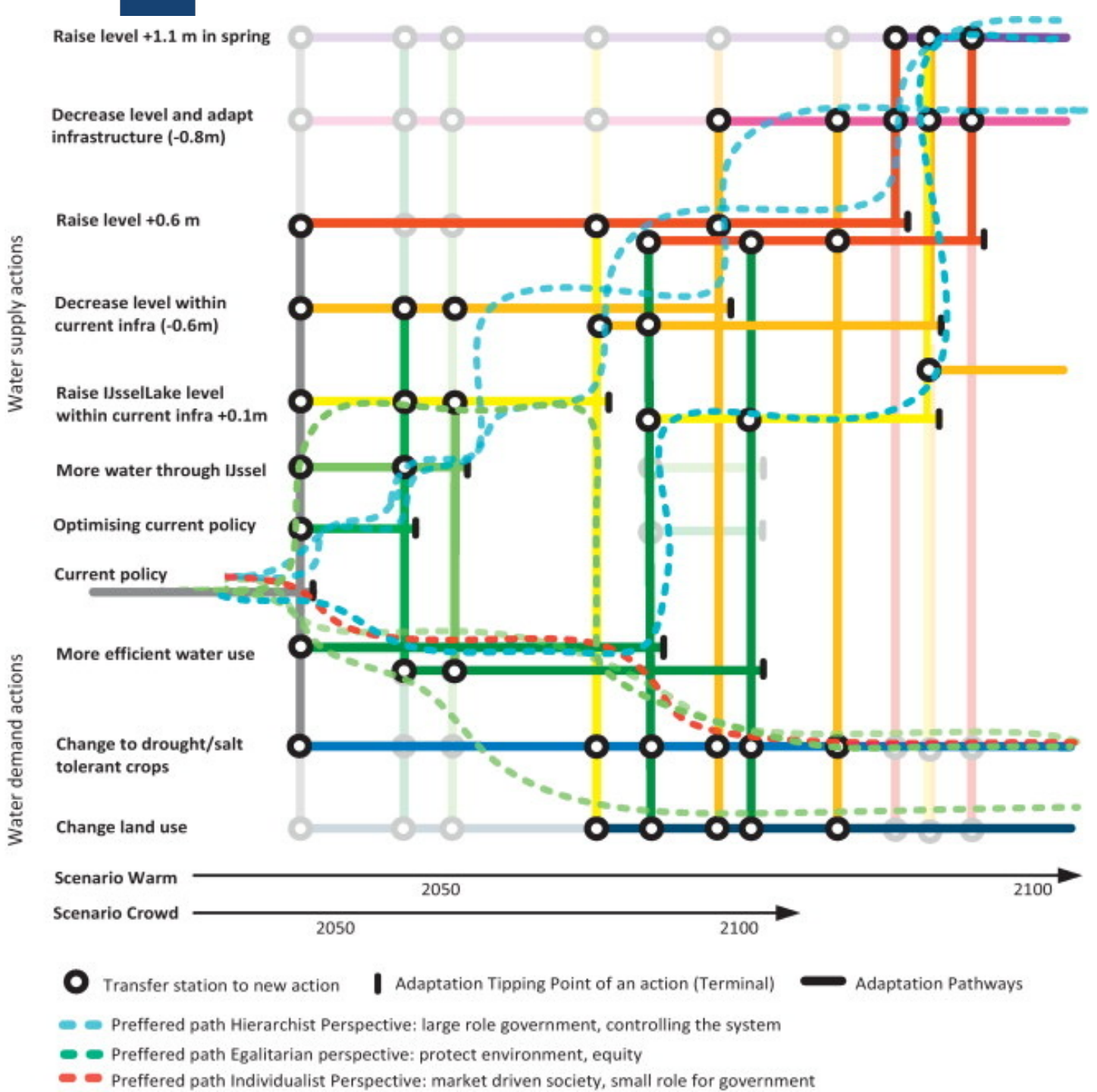
- The NAS should:
  - Contain concrete goals and targets;
  - Provide clarity on what is needed in the short, mid and long term
  - Promote integration between adaptation measures, but also between adaptation and other transitions

Programme objective NAS: a climate resilient Netherlands ◆ **Now and in the future**



This is a simplified version of reality. The connections between the pathways will be analysed.

Example

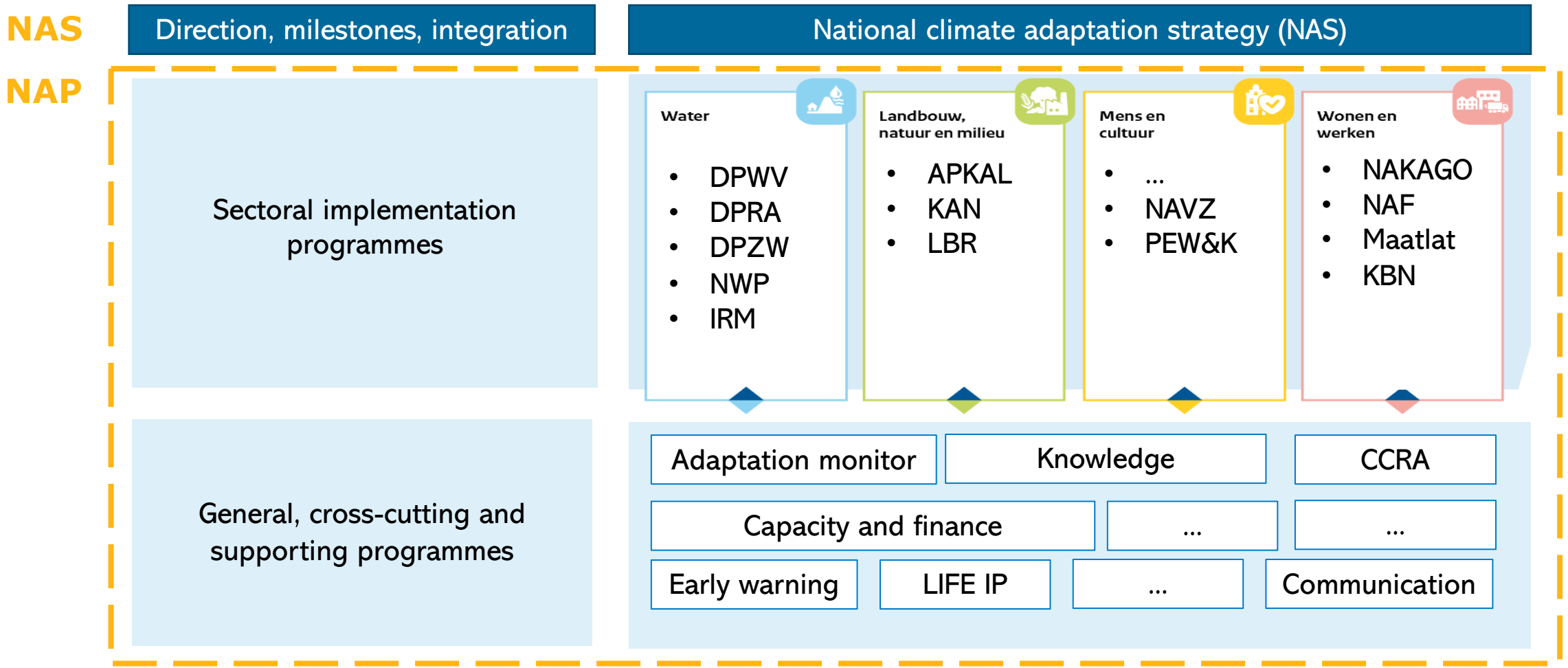


Source:
https://www.researchgate.net/figure/Adaptation-pathways-map-with-preferred-pathways-for-three-different-perspectives_fig19_258325895

Development process

- Track-leads from national government
- Make-atons with scientific community and policy makers
- Participatory process with non-state stakeholders
- Formal advise by Scientific Climate Council
- Environmental and socio-economic impact analysis

Programmatic approach



Ministry of Infrastructure
and Water Management

Thank you for your attention!

Chantal.oudkerkpool@minienw.nl

Update of the national Adaptation strategy and plan in Luxembourg

Bruno Alves
Ministère de l'Environnement, du Climat et de la Biodiversité

FRDO/CFDD Adaptation Conference
24/04/2024

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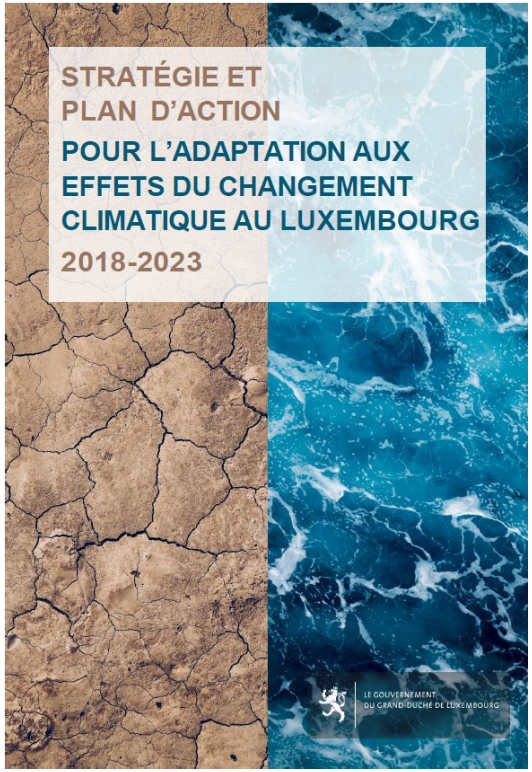
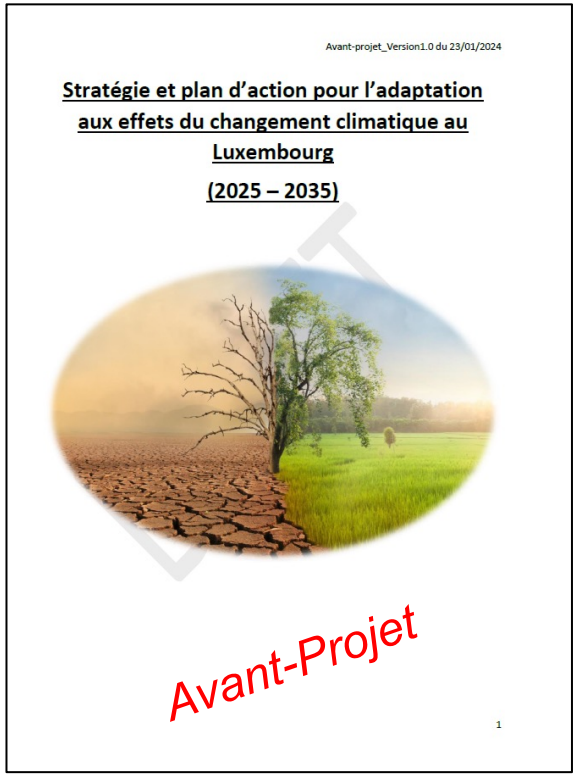
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Environnement, du Climat et de la Biodiversité

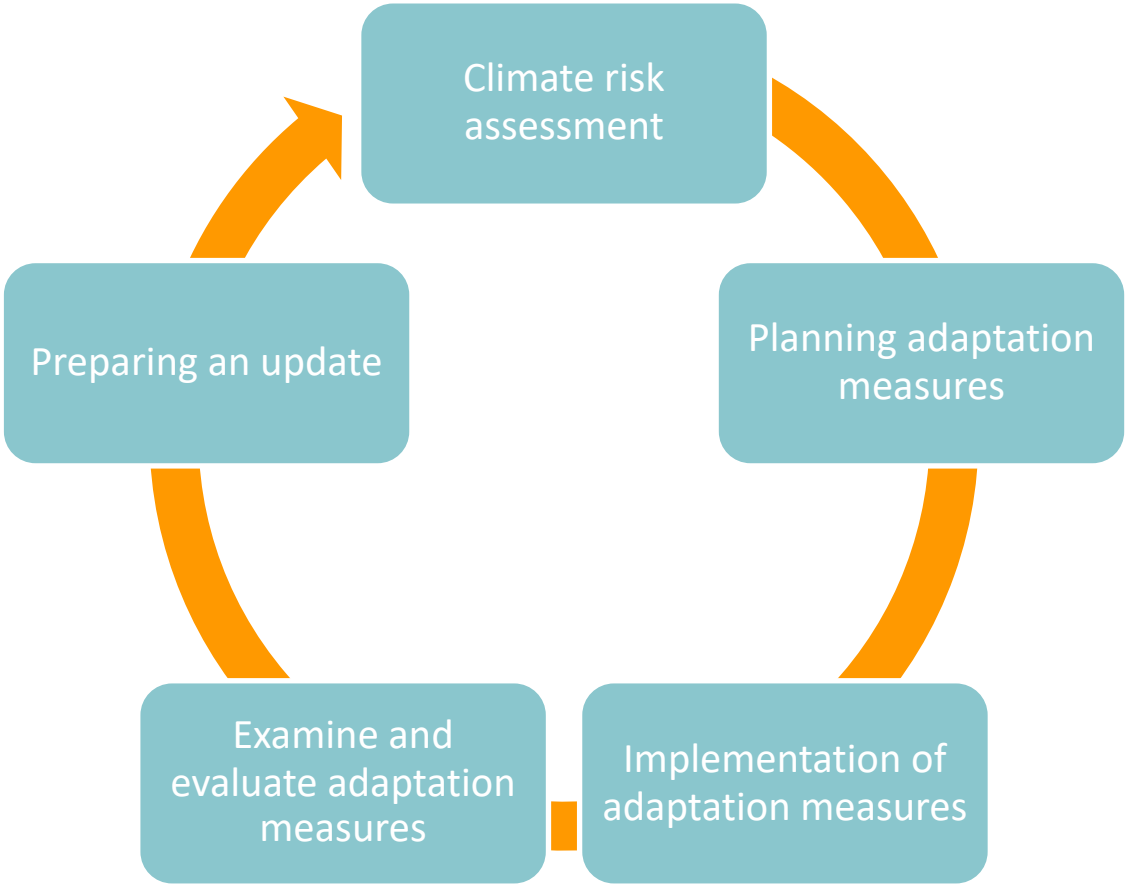
Adaptation aux effets du changement climatique

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG





Adaptation aux effets du changement climatique



➢ Past Observation in Luxembourg

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY | LIST

AgriMeteo

MeteoLux

➢ Projection and scenarios

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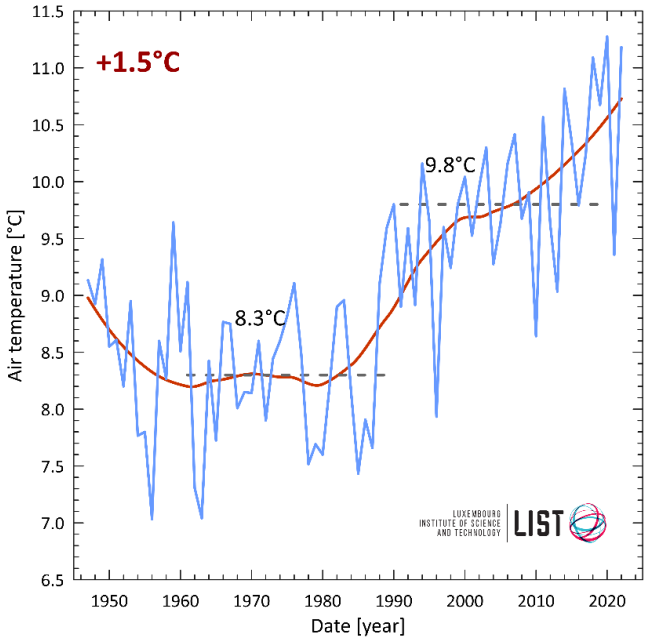
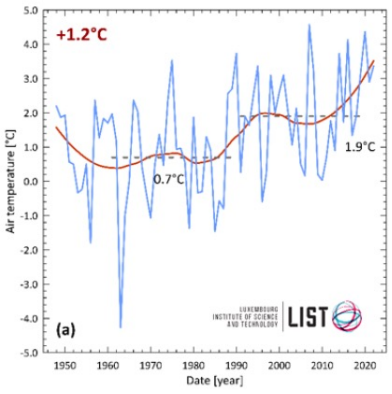
Past Observation in Luxembourg – Air temperature



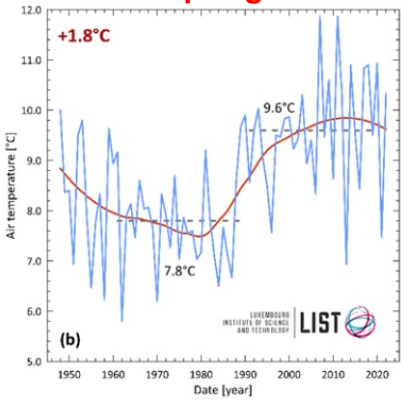
Average annual air temperature

- 1961-1990: 8.3°C
- 1991-2020: 9.8°C

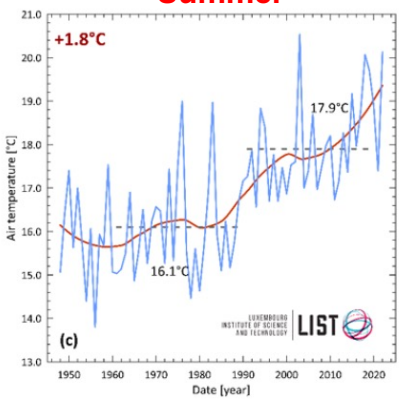
Winter



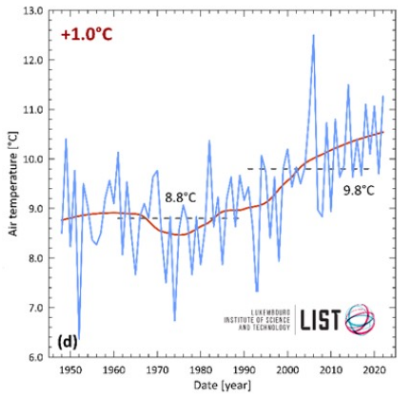
Spring



Summer

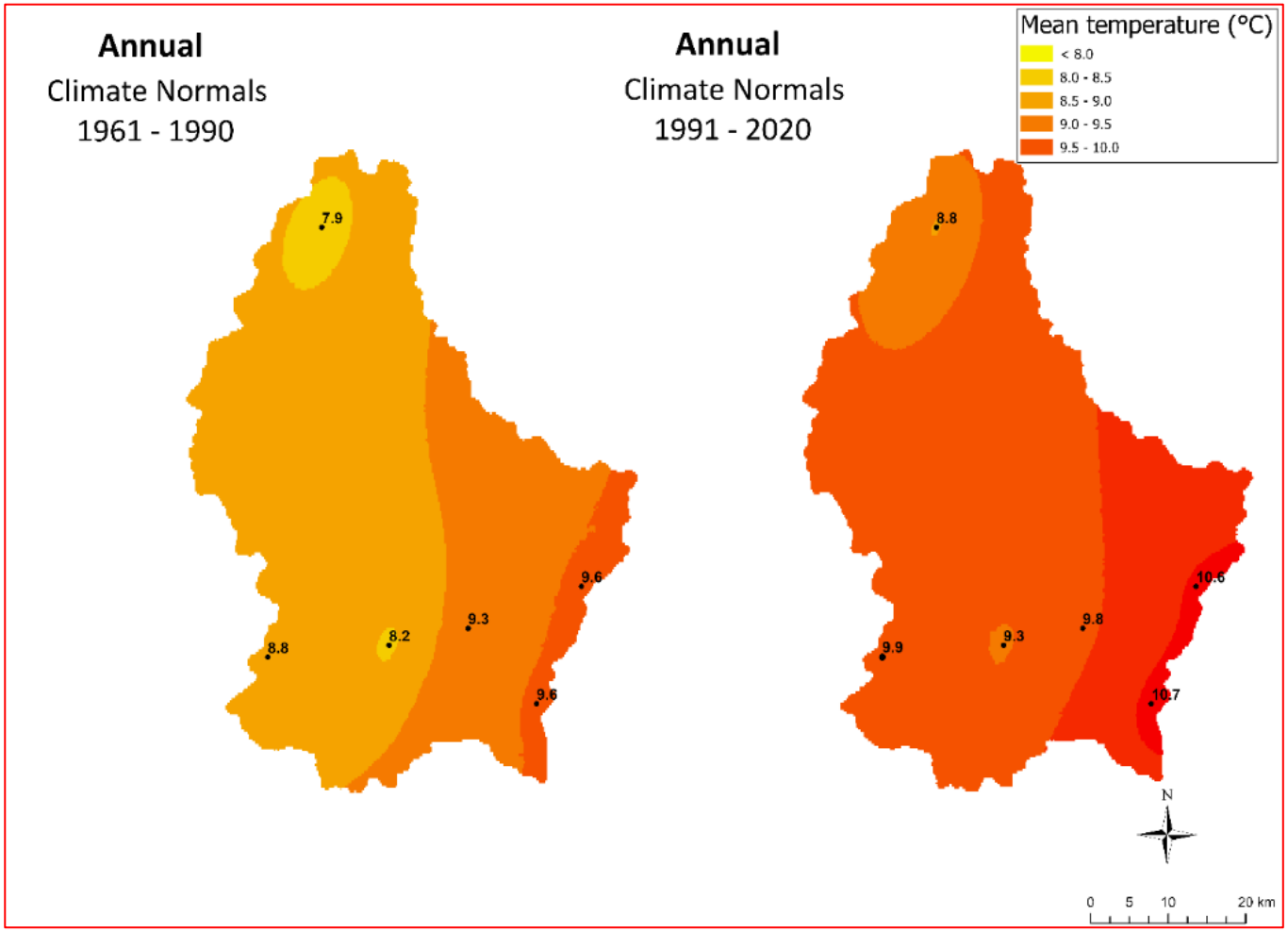


Autumn



Past Observation in Luxembourg – Air temperature

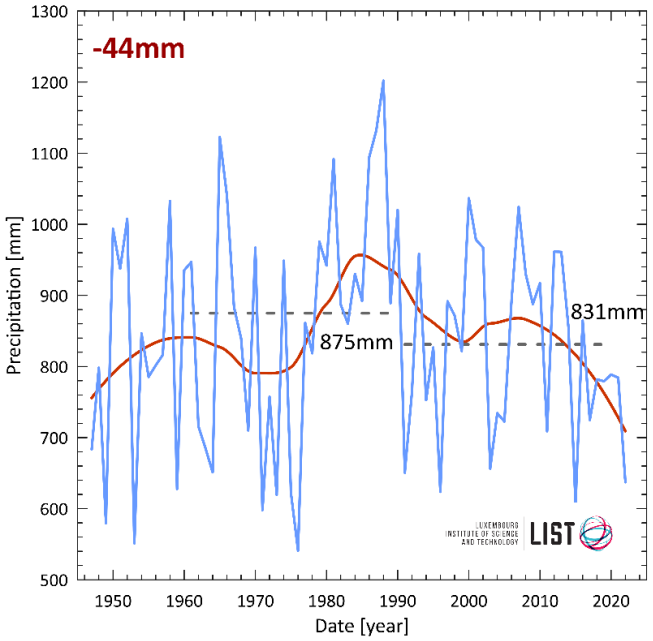
Average annual air temperature



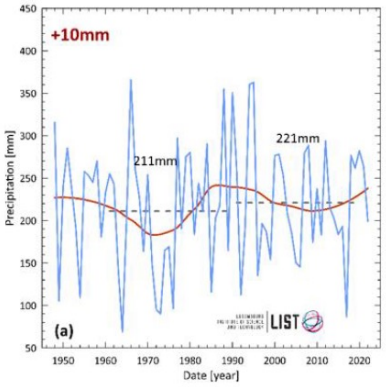
Past Observation in Luxembourg – Precipitation

Average annual precipitation

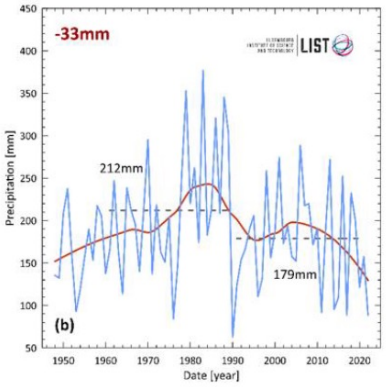
- 1961-1990: 875 mm
- 1991-2020: 831 mm



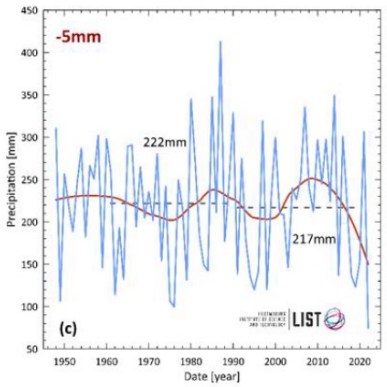
Winter



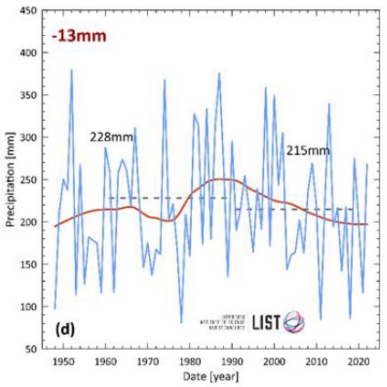
Spring



Summer

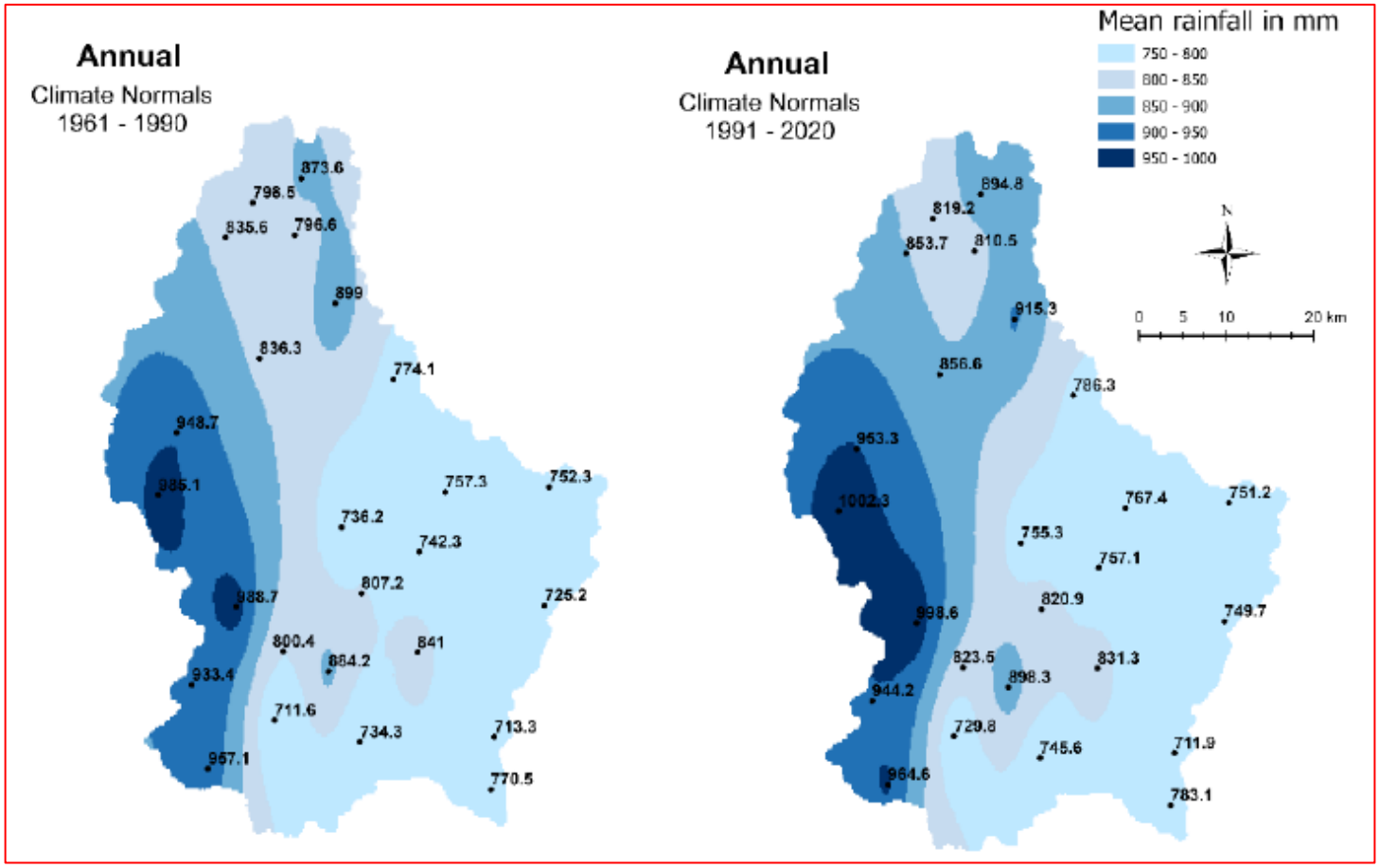


Autumn

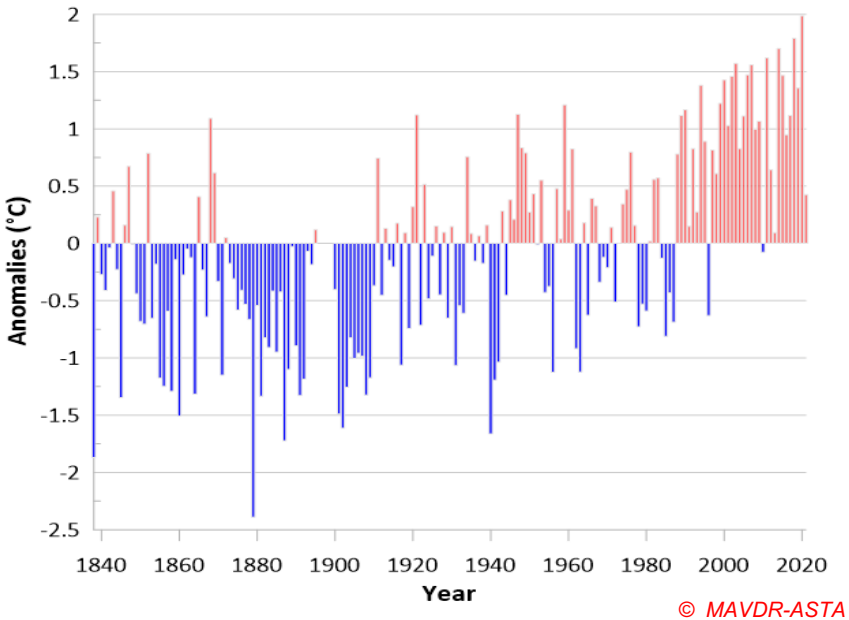


Past Observation in Luxembourg – Precipitation

Average annual precipitation



Past Observation in Luxembourg – Anomalies



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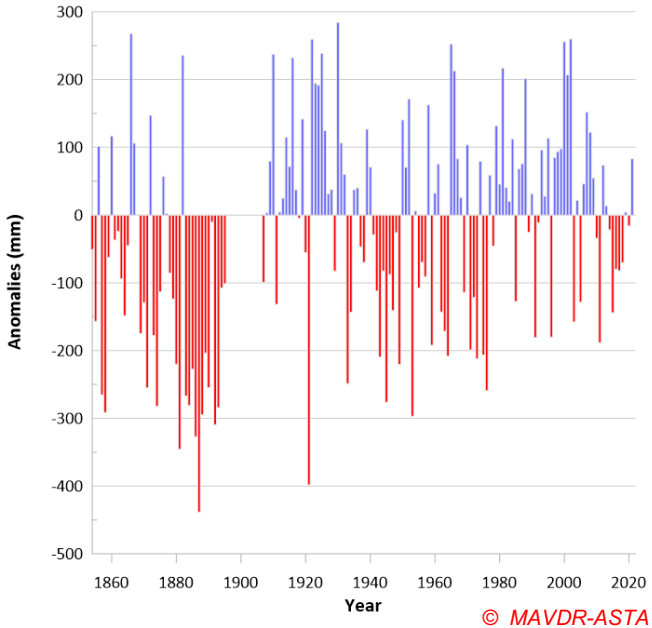
Annual air temperature anomalies

- In the last decades all air temperature anomalies - with the exception of 1996 - have been above the reference average.
- The highest anomaly, 3.0°C, was recorded in 2020

Annual precipitation anomalies

- The positive anomalies from 1990 onwards are also significantly lower than in previous decades.
- Since 2014, all years have had lower annual precipitation than the reference period.



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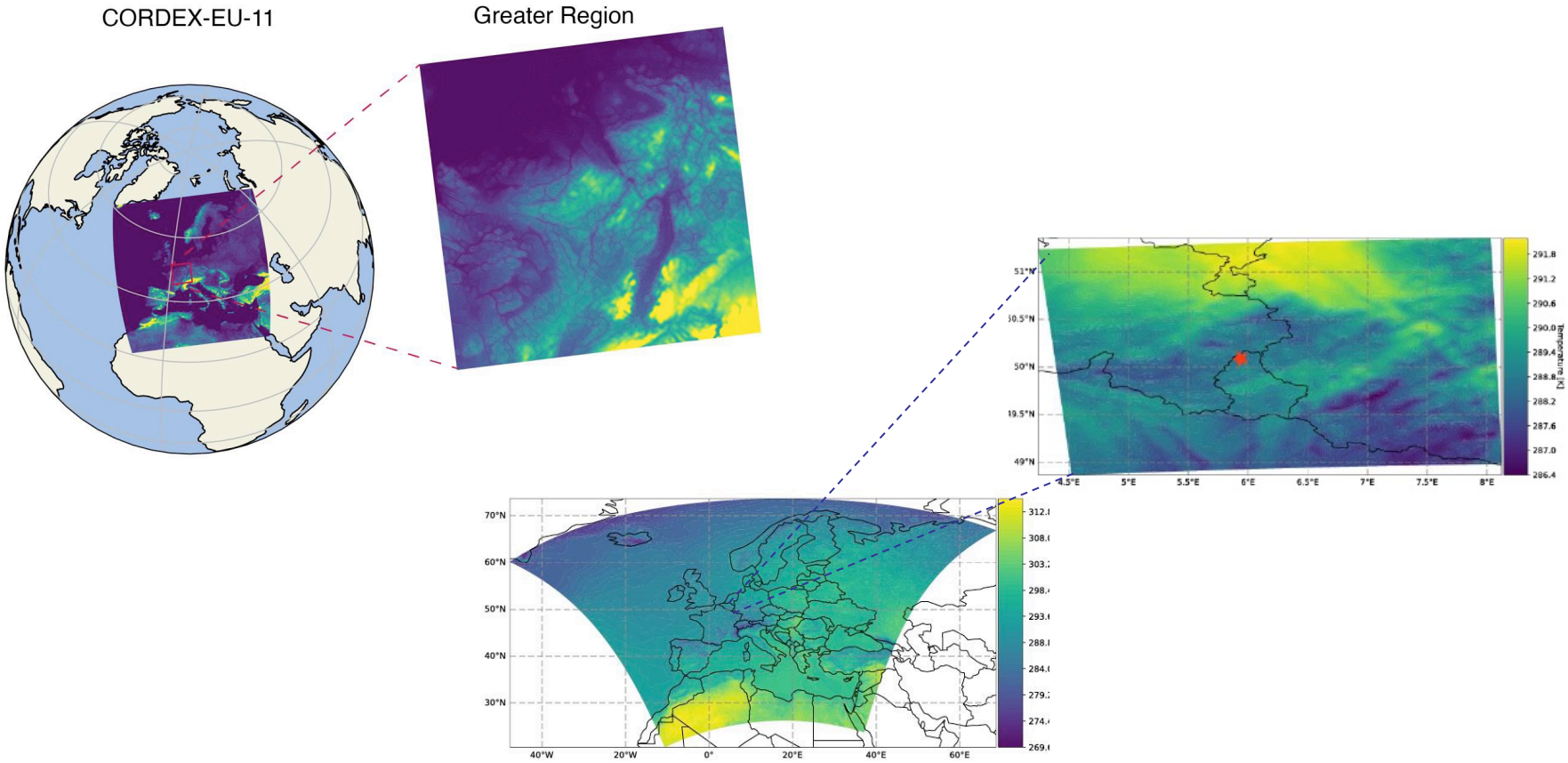
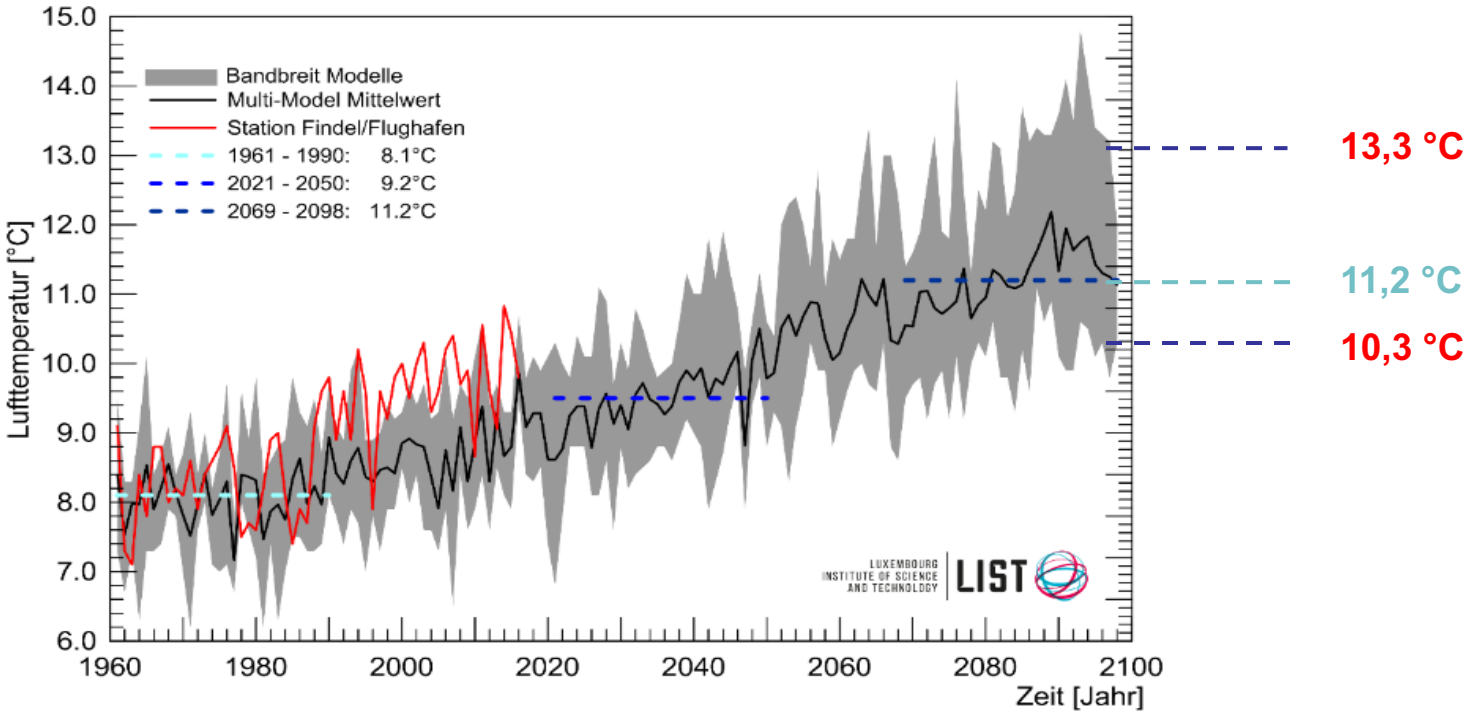
Future projections - Luxembourg

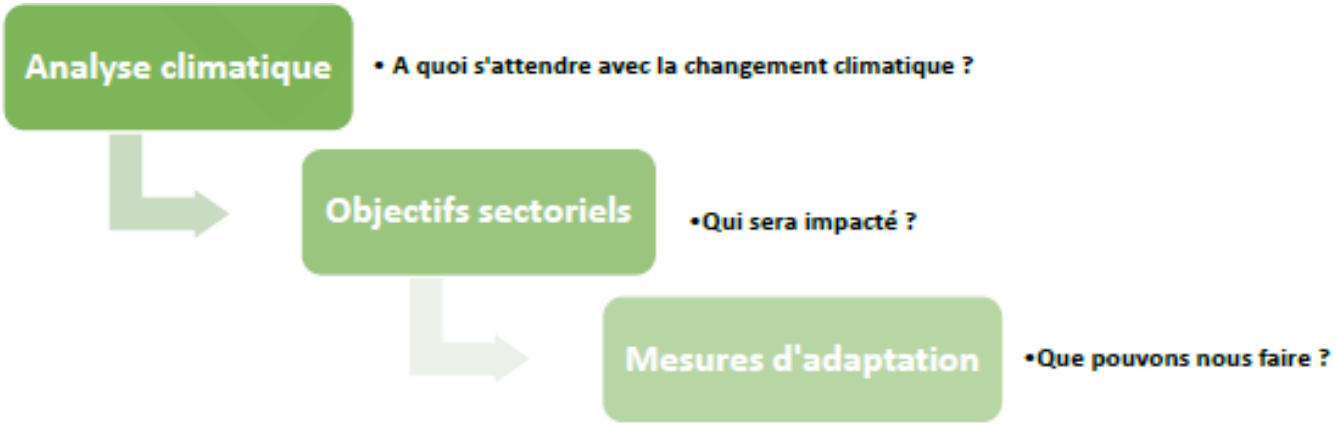


Future projections - Luxembourg

Projections are based on different scenarios (RCP2.6, RCP4.5, RCP8.5)

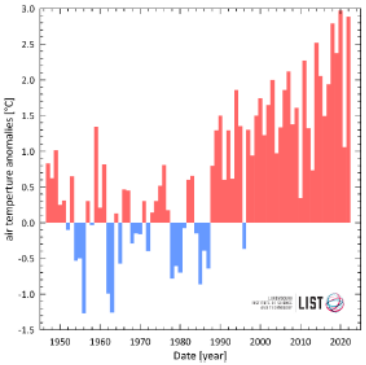


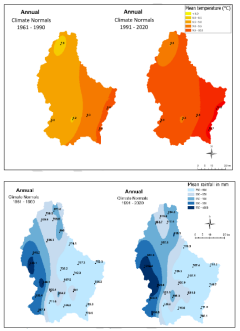
Structure of the NAS/NAP

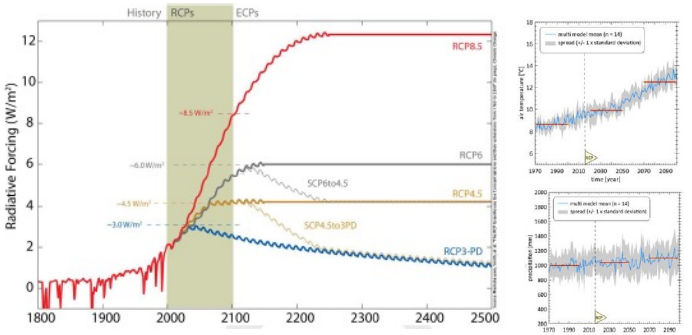


Adaptation aux effets du changement climatique

Assessing Luxembourg's climate: observations and projections







Risk assessment

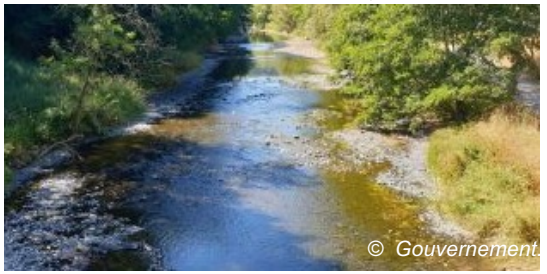
- Heat waves: 7.6 days/year → 21.9 to 64.7 days/year
- Frost periods: 84 days/year → 61.5 to 22.7 days/year
- Vegetation season: 247.9 days/year → 270 to 330.6 days/year
- Rainfall and drought variability
- Increased risk for floods and flash floods

Impacts on all areas and activities

❖ **Biodiversity loss**

❖ **Forestry**

❖ **Water**
(drought, floods, drinking water, waste water, …)



❖ **Civil protection**
(risk management,…)

❖ **Economy**

❖ **Societal risks**
(vulnerable people, just transition,…)

❖ **Agriculture**
(food production, crop loss, erosion, soil fertility, …)

❖ **Urban planning**
(Housing, construction,…)

❖ **Infrastuctures**
(roads, railways, electric power transmission, …)

❖ **Health**
(heat stress, air quality, infectious disease, mental stress,…)

Adaptation aux effets du changement climatique

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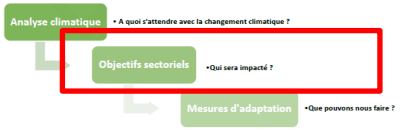


Impacts et Objectifs sectoriels

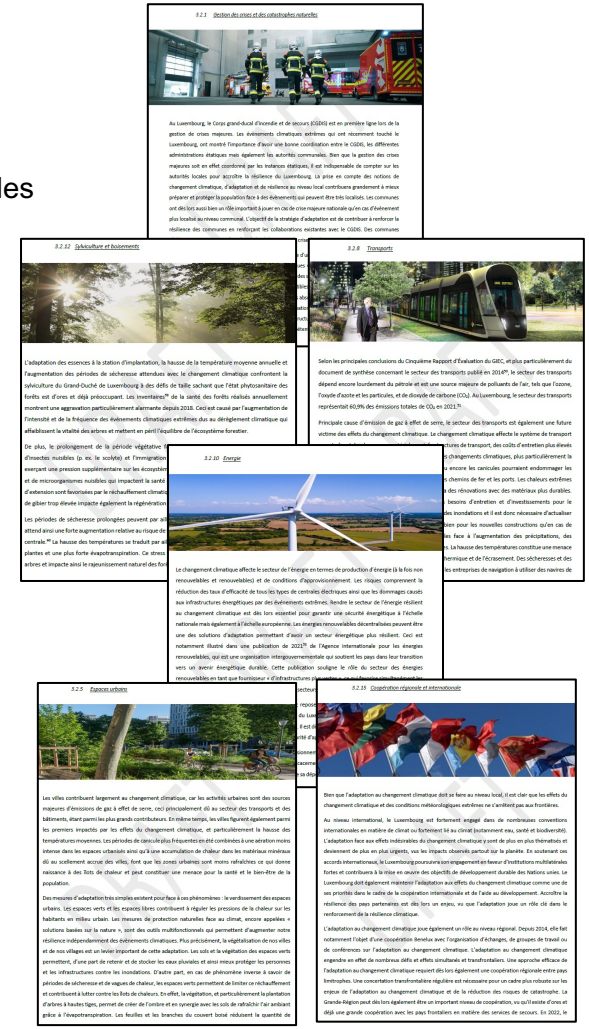
13 secteurs politiques

1. Construction et logement
2. Énergie
3. Sylviculture
4. Infrastructures
5. Gestion des crises
6. Aménagement du territoire
7. Agriculture
8. Santé
9. Écosystèmes et biodiversité
10. ~~Tourisme~~
11. Espaces urbains
12. Gestion de l'eau
13. Économie

→

16 secteurs politiques

1. Gestion des crises et catastrophes naturelles
2. Santé
3. Eau
4. Société
5. Espaces urbains
6. Aménagement du territoire
7. Logement et construction
8. Transport
9. Economie
10. Energie
11. Protection des sols
12. Sylviculture et boisements
13. Agriculture
14. Biodiversité et écosystèmes
15. Coopération régionale et internationale
16. Communication et sensibilisation



Adaptation aux effets du changement climatique

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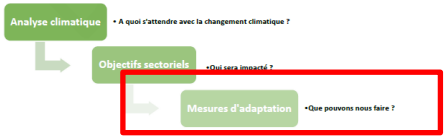

Plan d'action avec les mesures proposées

- 110 proposed measures
- Targeted measures
- Measurable objective or indicator
- 1 authority responsible for implementation

Désignation de la mesure	Promouvoir les modes de planification et de construction efficaces sur le plan climatique et conseiller les acteurs
Code mesure	LP03
Impact climatique	Aggravation de conflits d'intérêt sur l'emprise des sols, pression croissante sur les espaces libres, modification des zones vulnérables
Secteur	Aménagement du territoire, construction et logement, espaces urbains
Type de mesure	Sensibilisation, communication
Objectif de la mesure	Élaborer un guide sur la mise en œuvre concrète de plans d'adaptation pour les communes et bureaux d'étude
Description de la mesure	Dans le cadre de cette mesure, les étapes suivantes sont p. ex. à fixer :
	• Amendement et *climate proofing* des PAG/PAP/Règlement des bâtisses • Proposer des formation continues pour les bureaux d'étude • Dimensionner les infrastructures • Établir un lien avec le pacte sur le climat • Mettre en place une structure de conseil au sein du ministère • Recruter des planificateurs/conseillers en questions climatiques • Mettre à disposition des subventions publiques pour les mesures d'adaptation • Promouvoir les logements de petite taille (m²/habitant), densifier les ZAE
Observations supplémentaires	
Responsabilité de mise en œuvre	Ministère de l'Intérieur, Ministère de l'Énergie et de l'Aménagement du territoire

4.6.4 *Elaborer un recueil avec des idées et des proposition concrètes en faveur du climat pouvant être intégrées dans les règlements des bâtisses et les parties écrites des PAG*

Objectif / Indicateur : Publication d'un recueil avec des idées de « bonnes pratiques »

Description de la mesure : Les mesures d'adaptation aux effets du changement climatique peut prendre de multiples formes, et ceci particulièrement en milieu urbain. Certaines règles urbanistiques contribuent ainsi grandement à ce que le développement urbain contribue activement à une meilleure résilience. Pour cela, il est parfois nécessaire de définir des règles dans les règlements sur les bâtisses ou dans les parties écrites des PAG et des PAP. Afin de soutenir les communes, la présente mesure propose l'élaboration d'un de recueil de bonnes pratiques et ainsi fournir une synthèse avec des informations utiles et des exemples concrets du point de vue de l'élaboration des politiques locales en matière d'adaptation aux effets du changement climatique. Ce recueil doit comprendre des exemples propositions concrètes à intégrer dans les règlements de bâtisses et/ou des PAG en vue de lutter contre le stress thermique, créer des couloir d'air frais, favoriser le principe de la ville-éponge, protéger et restaurer la biodiversité, etc.

Autorité responsable : Ministère de l'Environnement, du Climat et de la Biodiversité

Methodology: Consultation and active participation

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1: Preparation of a preliminary draft by the Ministry for the Environment, Climate and Biodiversity

2: Consultation and written feedback from other Ministries and administrations

→ proposals from other ministries are incorporated into the document

→ Consultation of the Climate Policy Observatory

3: Approval of a draft strategy by the Government Council

The Council of Government agrees to consult the public and stakeholders.

4: Public and stakeholder participation

- Participatory process
- Consultation of the population, municipalities, inter-municipal associations, businesses, professional chambers, NGOs, etc.

5: Approval of the Adaptation Strategy by the Government Council

6: Implementation of measures

Every Political area is concerned – Policy coherence is needed !

Implementation of the NAS at national level

Ministère des Affaires intérieures (CGDIS)

Ministère d'État (HCPN)

Ministère de la Santé et de la Sécurité sociale

Ministère de la Famille, des Solidarités, du Vivre ensemble et de l'Accueil

Ministère du Logement et de l'Aménagement du territoire

Ministère de la Mobilité et des Travaux publics

Ministère de l'Économie

Ministère des Finances

Ministère de l'Agriculture, de l'Alimentation et de la Viticulture (ASTA)

Ministère des Affaires étrangères et européennes, de la Défense, de la Coopération et du Commerce extérieur

Ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse

Ministère de la Fonction publique

Ministère de l'Environnement, du Climat et de la Biodiversité (AGE, ANF, AEV)

Municipalities

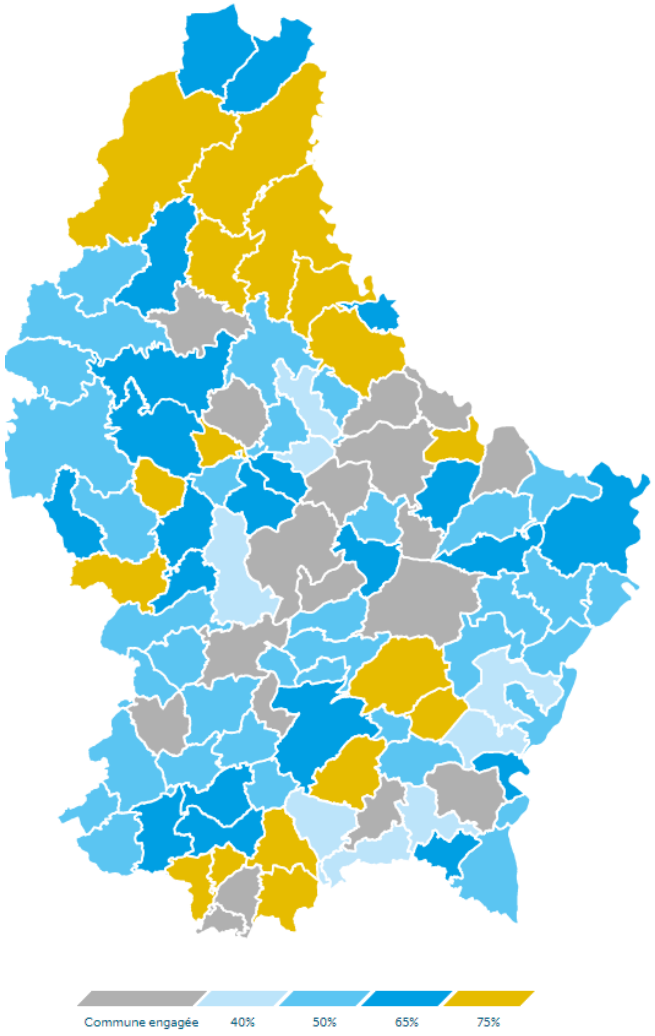
At local level – Pacte climat & Pacte Nature

PacteNature
Ma commune s'engage pour la nature

PacteClimat EUROPEAN ENERGY AWARD
Ma commune s'engage pour le climat

- Contract between the State and the municipalities, which voluntarily undertake to carry out actions for the climate and the protection of nature
- The municipality has to analyze its deficits, set goals and plan local measures
- Sensitize and involve its citizens
- Networking - The municipality should exchange ideas with other actors in order to learn from their experience

At local level – Pacte climat & Pacte Nature



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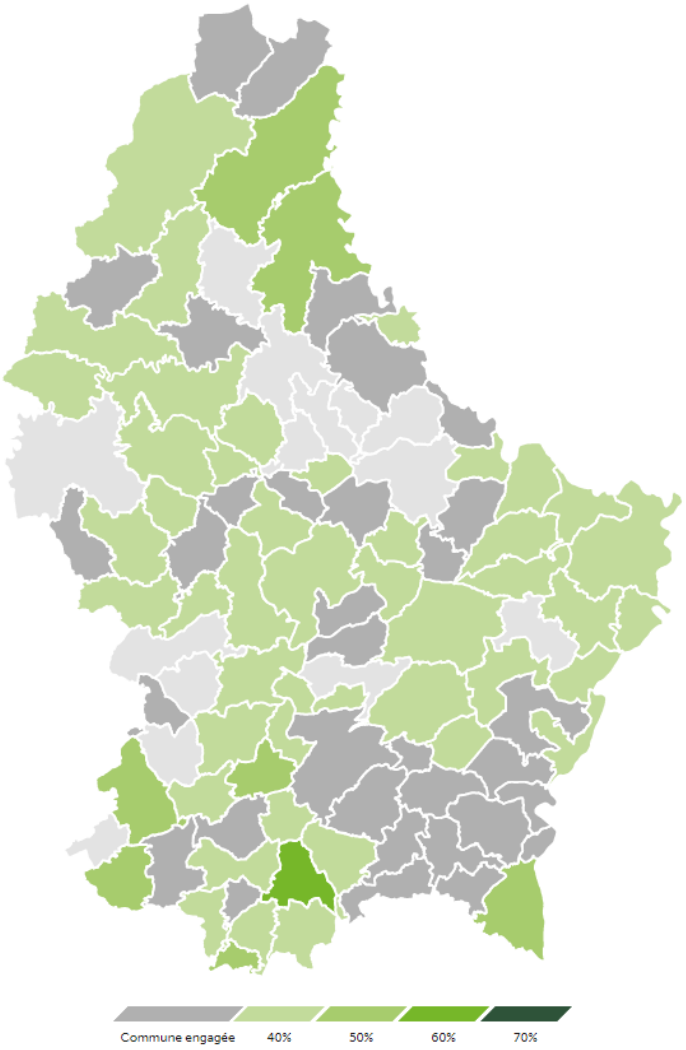


© Pacte Nature

At local level – Pacte climat & Pacte Nature

PacteClimat
Ma commune s'engage pour le climat

Mesures liés à l'adaptation au changement climatique

Conceptuel

1.1.1 Ancrage politique des objectifs en matière d'énergie, de climat et de ressources

1.1.3 Concept d'adaptation aux effets du changement climatique

1.2.3 Planification de l'adaptation climatique

Aménagement du territoire

1.3.1 Instruments de l'aménagement territorial

1.3.2 Développement urbain et rural innovant

2.3.2 Gestion rationnelle de l'eau

3.3.1 Approvisionnement en eau

3.3.2 Gestion des espaces verts

Communication et identification

2.1.1 Effet d'exemplarité des bâtiments et infrastructures publics

5.1.1 Gouvernance communale du Pacte Climat

6.1.1 Plan de communication et de collaboration

6.1.2 Exemplarité, identité de la structure

6.4.2 Citoyens

6.5.1 Service de conseil en énergie, mobilité, écologie, climat, ressources, bruit

6.5.2 Projet phare

PacteClimat
Ma commune s'engage pour le climat

Certification thématique « adaptation au changement climatique »

1. La commune est certifiée **50 %, 65%** ou **75 %.**
2. La commune atteint **au moins 65 %** des points maximales réalisables sur les mesures propres à l'adaptation au changement climatique.
3. La commune a **planifié** ou **réalisé** un **projet innovateur** en lien avec la thématique de l'adaptation.

Thank you for your attention!

Bruno ALVES
LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Environnement, du Climat et du Développement durable

4, place de l'Europe, L-1499 LUXEMBOURG
Tél. (+ 352) 2478-6864
E-mail : bruno.alves@mev.etat.lu
www.emwelt.lu

An overview of the Adaptation policy in Belgium

Jelle Dehaen – Unit Foresight & Transversal Policy - Adaptation
jelle.dehaen@health.fgov.be

Health
Food Chain Safety
Environment

Climate change in Belgium

- Main consequences today and in the future
  - Average temperature increase and more frequent heatwaves
  - Drought and water scarcity
  - Pluvial and Fluvial flooding
  - Sea level rise

Adaptation on the regional level - Flanders

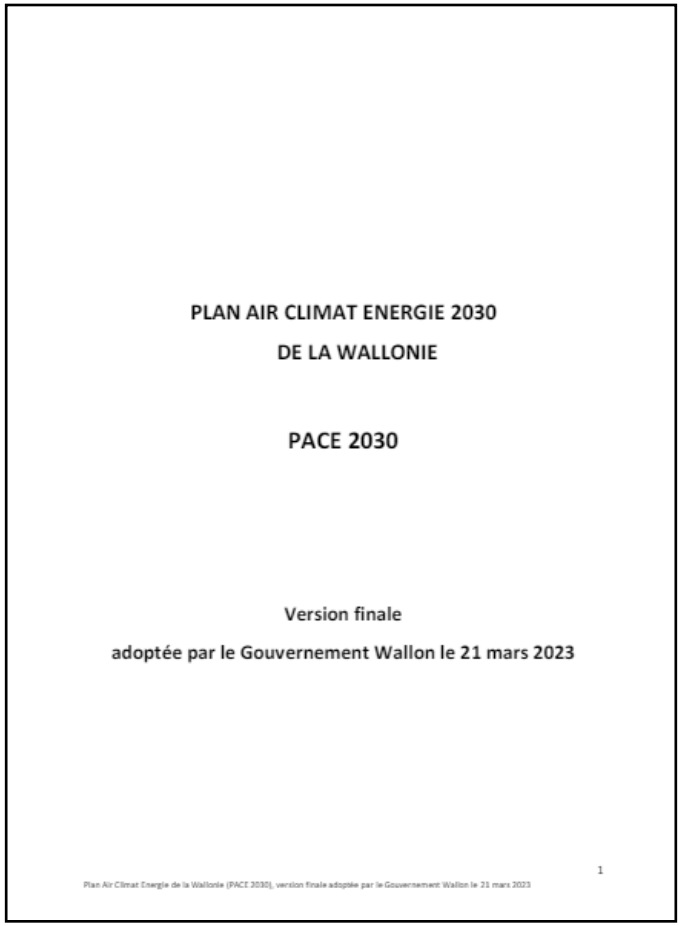
- Flemish Climate Adaptation Plan 2030 with a vision towards 2050.
- Adopted in 2022 by the Flemish government with the aim to make Flanders climate resilient by 2050.
- Action based policy plan for multiple entities and departments within the Flemish government.
- Includes short and long-term visions.

Adaptation on the regional level - Flanders

- 6 main strategies / focus points
  - Flanders builds and connects green-blue infrastructure, always and everywhere
  - Water availability and water use
  - Room for water in order to realise water security and prevention of drought
  - Recovery and climate smart management of nature and forests
  - Climate adaptive health policy
  - Cooperation and coordination
- Implementation of nature-based solutions where possible.
  - Recover and protect ecosystems
  - Climateproof
  - Buffer further climate change
  - Healthy environment
  - Increase biodiversity

Adaptation on the regional level - Wallonia

- The Walloon Air-Climate-Energy Plan 2030
  - Adaptation section with a focus on Infrastructure, Health, Agriculture & forests, Research and International cooperation



PLAN AIR CLIMAT ENERGIE 2030

DE LA WALLONIE

PACE 2030

Version finale

adoptée par le Gouvernement Wallon le 21 mars 2023

1

Plan Air Climat Energie de la Wallonie (PACE 2030), version finale adoptée par le Gouvernement Wallon le 21 mars 2023

Adaptation on the regional level - Wallonia

- Walloon recovery plan

→ 5 Pillars

  - Commit to the youth and talents of Wallonia
  - Ensure environmental sustainability
  - Strengthen economic development
  - Support welfare, solidarity and social inclusion
  - Ensure innovative and participatory governance

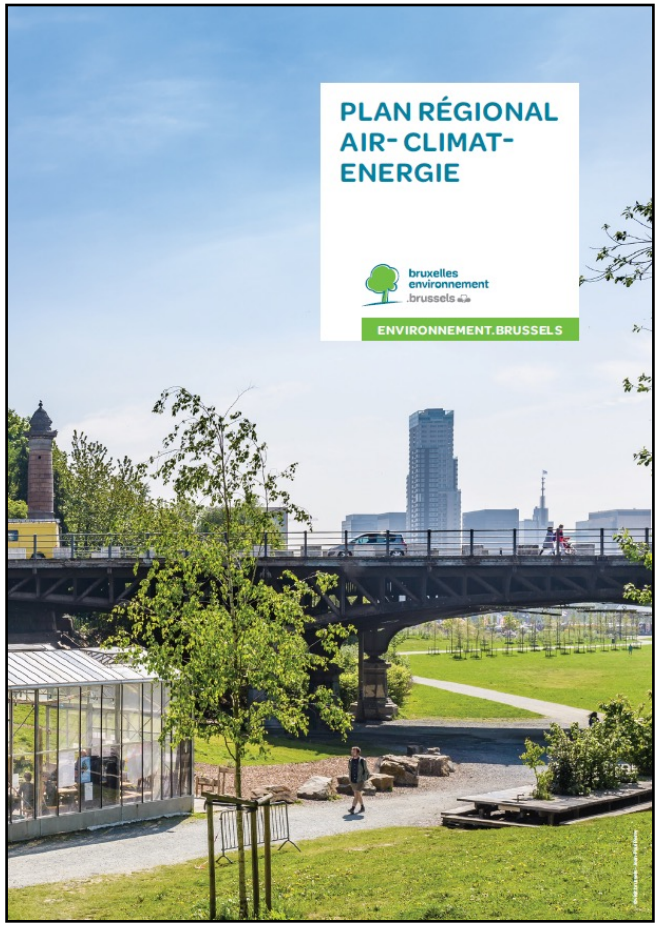
→ Measure concerning recovery and resilience are divided across these 5 pillars.

Adaptation on the regional level - Brussels

- Air-Climate-Energy Plan 2023-2027

→5 pillars of action to adapt to climate change

  - PILLAR 4: Adapt buildings to the effects of climate change
  - PILLAR 5: Strengthening the resilience of the urban environment
  - PILLAR 6: Improve the resilience of critical and essential infrastructures (especially healthcare)
  - PILLAR 7: Protecting the population from extreme events and the emergence of new diseases and allergies linked to climate change
  - PILLAR 8: Evaluation of the evolution of the urban environment within the framework of adaptation



Adaptation on the regional level - Brussels

3 main focuses where possible, mainly in the urban environment ：

- nature-based solutions
  - Preservation of living soil
  - Integrated stormwater management
  - new water management plan 2022-2027
- Strengthening and developing vegetation and biodiversity (2016 nature plan and new measures)
- Strengthening the resilience of the Forêt de Soignes, Integrate resilience issues into land-use planning tools and town-planning regulations

Adaptation on the Federal level

- Towards a climate change resilient society by 2050 – Federal adaptation measures 2023-2026
- 28 measures within 8 action domains
  - Research, Biodiversity, Infrastructure, product standards, Public Health, Risk and crisis management, International cooperation, and sensibilization.

Adaptation on the Federal level - Examples

- Research: High resolution climate scenario's,..
- Biodiversity: Nature restoration in the North Sea, Biodiversiscape,..
- Infrastructure - Transport: Integration of Extreme weather scenario's in federal transport sectors (Infrabel, skeyes, NMBS..)
- Infrastructure - Federal buildings: Water management, green spaces,..
- product standards: information around circularity, affordability and EU criteria
- Public Health: Emergency planning concerning long-term incidents.
- Risk and crisis management: Impact of CC on critical infrastructure,..
- International cooperation - development cooperation: Increase contribution to multilateral and bilateral climate finance focused on adaptation.
- International cooperation - Defense: Modernization of the maritime escort capacity.
- Sensibilization: Include adaptation in the climate coaches,..

Adaptation on the National level

- Work of the National Workgroup on Adaptation under the coordination of the federal level.

- This plan provides a coherent framework for an integrated adaptation policy, through new measures that aim to promote synergy between measures at different policy levels and cooperation between federal and regional authorities.

- The focus is on knowledge exchange and coordination between the different entities as well as research and awareness raising. The measures identified are complementary to actions implemented in the different entities.

Adaptation on the National level

- Next steps:
  - Public consultation planned for summer 2024.
  - Publication planned for (early) winter 2024.

Beyond 2024

- Risk Assessment of the Walloon Region (2025)
  - Update regional climate projections.
  - Assess vulnerabilities in various areas.
  - Make concrete adaptation proposals/recommendations and prioritize them, along with ways of financing them.
- Sectoral risk analysis on a national scale by CERAC (2025)

→ Report will contain

  - Existing climate change risk assessments by sector.
  - Shortcomings in sectoral risk assessments and recommendations for completing the missing studies.
  - A summary of the key elements identified for each sector, including risks.

Adaptation under the Belgian presidency

- Opportunity to send signal for the next 5-year policy cycle => COUNCIL CONCLUSIONS

→Adaptation & resilience

→Circular economy

→ Just transition

Adaptation under the Belgian presidency

Gaps and loopholes

LEGAL FRAMEWORK
Which EU framework to speed up solutions? How to monitor progress? How to speed up the mainstreaming of adaptation in sectorial policies? …

FINANCIAL FRAMEWORK
How to ensure sufficient funding? How to make funding more easiliy accessible to local governements? How to make NBS bankable? …

CLIMATE PROTECTION GAP
What role for the private sector? How to put into effect the "build back better" and "polluter pays" principles? Which solidarity mechanisms across the EU? …

Key input

EUCRA &

Communication on climate risks

Communication on the mid-term review of the 8th Environmental Action Programme (EAP)

Adaptation under the Belgian presidency – NEXT STEPS & UPCOMING EVENTS

- **29 April 2024**: Joint reception with IUCN – focus on nature-based solutions across EU policies, Brussels
- **13 May 2024**: EEB 50th Anniversary Conference, 13 May, Brussels
- **22-23 May 2024**: 3rd Mission Adaptation Forum, Brussels. Site visits in Flanders, Wallonia and Brussels.
- **17 June 2024**: formal ENVI Council, Luxembourg

Orientation debate on climate adaptation; Council conclusions 8EAP

(provisionnal agenda)

Marhetak

FRDO 24-04-2024

EMRIC

Wallonie service public SPW

waterschap limburg

Veiligheidsregio Zuid-Limburg

Nationaal Crisiscentrum Centre de crise National

Interreg Euregio Meuse-Rhine Marhetak

EUROPEAN UNION European Regional Development Fund

The need for Marhetak: July 2021

The Euregio Meuse-Rhine

During the flooding crisis of July 2021 cross-border cooperation proved to be difficult

- Enormous demand for assistance
- Uniform knowledge
- Crisis communication

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Euregio Meuse-Rhine
Marhetak

EUROPEAN UNION
European Regional Development Fund

Marhetak partners

- Aim: improve & robustify euregional cooperation in times of a flooding crisis

Wallonie service public SPW

waterschap limburg

Nationaal Crisiscentrum
Centre de crise National

Veiligheidsregio Zuid-Limburg

EMRIC

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NCCN - Paragon

Nationaal Crisiscentrum
Centre de crise National

Projectpartner

Interreg
Euregio Meuse-Rhine
Marhetak

EUROPEAN UNION
European Regional Development Fund

Paragon

- EMR pilot region for cross-border setting
- Enrichment with data on water levels
- Connection with LCMS and test in German crisisteam
- Exercise on 12th December

German crisis staff

Interreg Euregio Meuse-Rhine Marhetak

EUROPEAN UNION European Regional Development Fund

Dutch crisis staff

Interreg
Euregio Meuse-Rhine
Marhetak
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Belgian crisis staff

Interreg
Euregio Meuse-Rhine
Marhetak

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European Regional Development Fund

EMRIC

Veiligheidsregio Zuid-Limburg

EMRIC

Leadpartner

Interreg Euregio Meuse-Rhine Marhetak

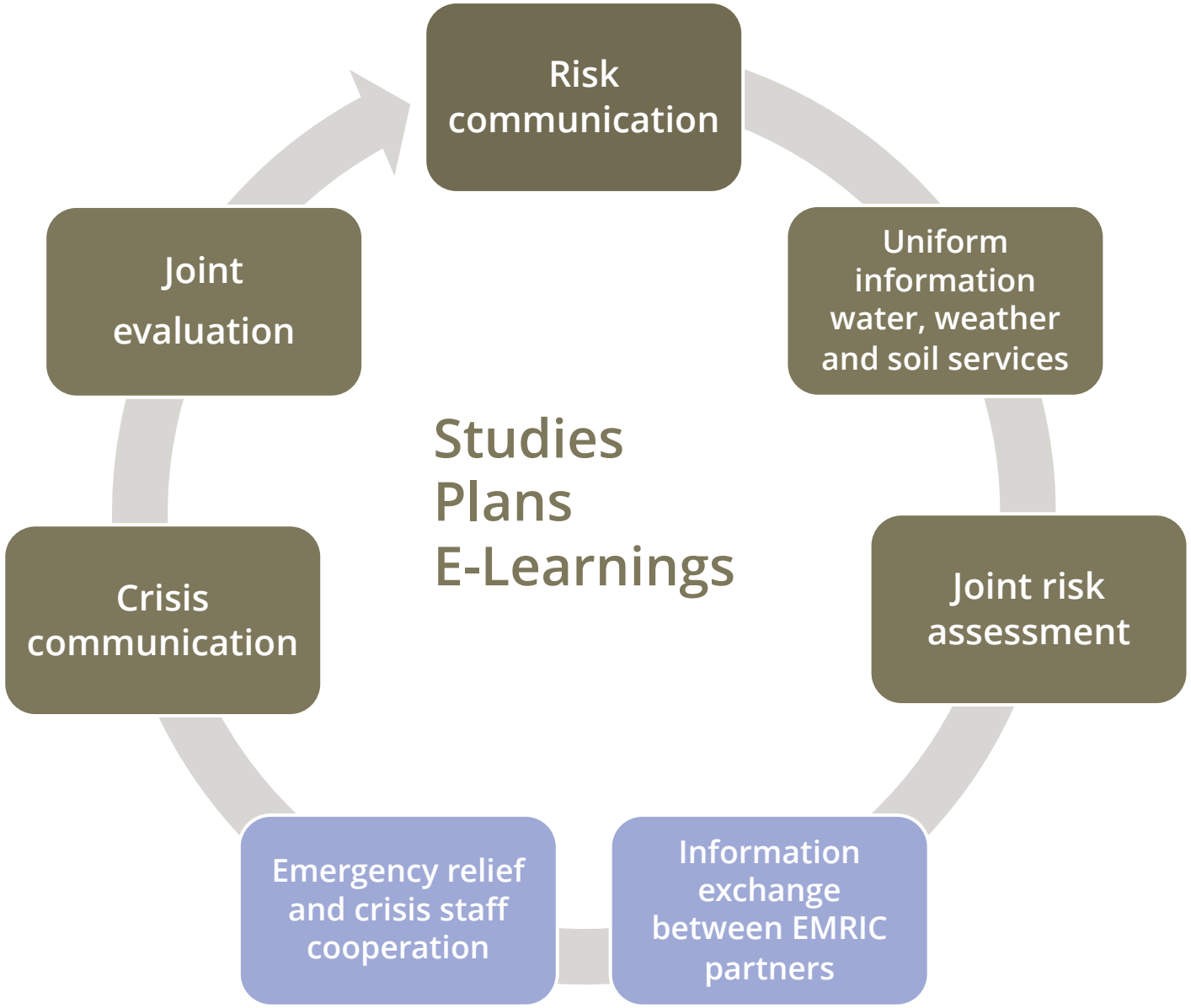
EUROPEAN UNION European Regional Development Fund

What is EMRIC?

- Permanent partnership of public crisis and emergency organisations in the region of the EMR
- Coordination by EMRIC bureau
- Fire brigades, ambulance care, public crisis organisations, technical assistance, infectious disease control
- Daily care and disaster situations

Interreg
Euregio Meuse-Rhine
Marhetak

EUROPEAN UNION
European Regional Development Fund


Risk communication
Uniform information water, weather and soil services
Joint risk assessment
Information exchange between EMRIC partners
Emergency relief and crisis staff cooperation
Crisis communication
Joint evaluation
Studies
Plans
E-Learnings

SPW

Wallonie service public SPW

Partner

Interreg Euregio Meuse-Rhine Marhetak

EUROPEAN UNION European Regional Development Fund

The role of SPW

- Regional water service in Wallonia
- Research on risk culture in the EMR
- Develop a guidance report for local authorities
- Enhance citizen participation in forming a risk culture

Waterschap Limburg

Partner

Interreg
Euregio Meuse-Rhine
Marhetak

EUROPEAN UNION
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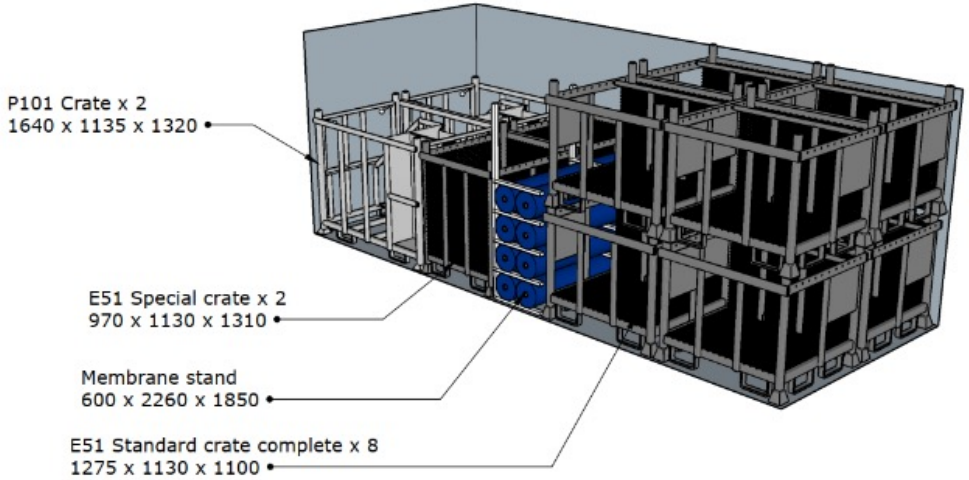
Purchase of mobile dikes



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European Regional Development Fund

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Euregio Meuse-Rhine
Marhetak

EUROPEAN UNION
European Regional
Development Fund

And now?

What have we learned?

What have we learned

- Paragon is a great ‘toolbox’ for sharing information between crisis teams. More steps are needed to reach use in the EMR
- Information exchange remains crucial especially between the water and weather services
- Use the momentum to raise awareness inside and outside water and crisis organisations for the importance of cross-border cooperation

Thank you for your attention!

Adaption and Resilience Conference
Brussels, April 23-24 2024

INTRODUCTION FIER

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FIER

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FIER is more than being Proud

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SYMSAGEB

- **Local Public Authority**, in charge of plan & management of local water policy, **flood prevention**, management of natural aquatic environments, management of wetlands.
- **Competence** relevant to FIER: **flood prevention**
- **Location**:

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Missions

FIER

FLOOD RISK AWARENESS

SELF-EFFICACY PROMOTION

COMMUNICATION

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November 2023

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FIER = PROUD

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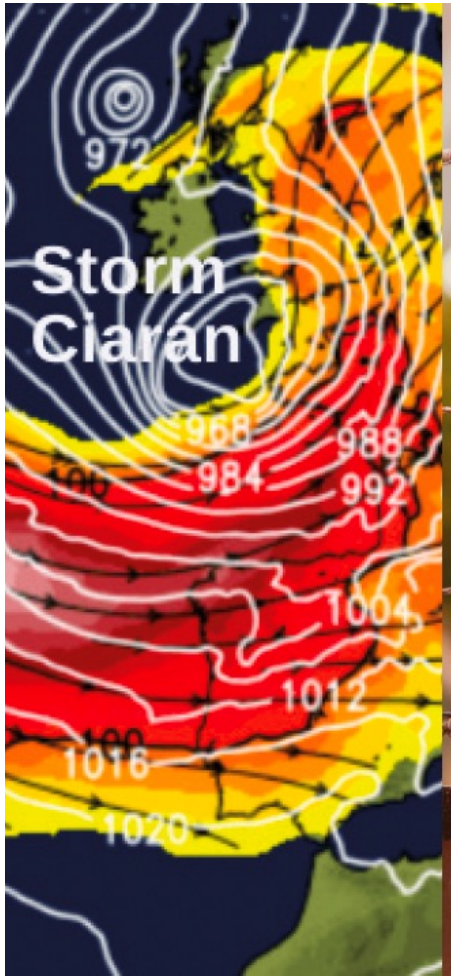
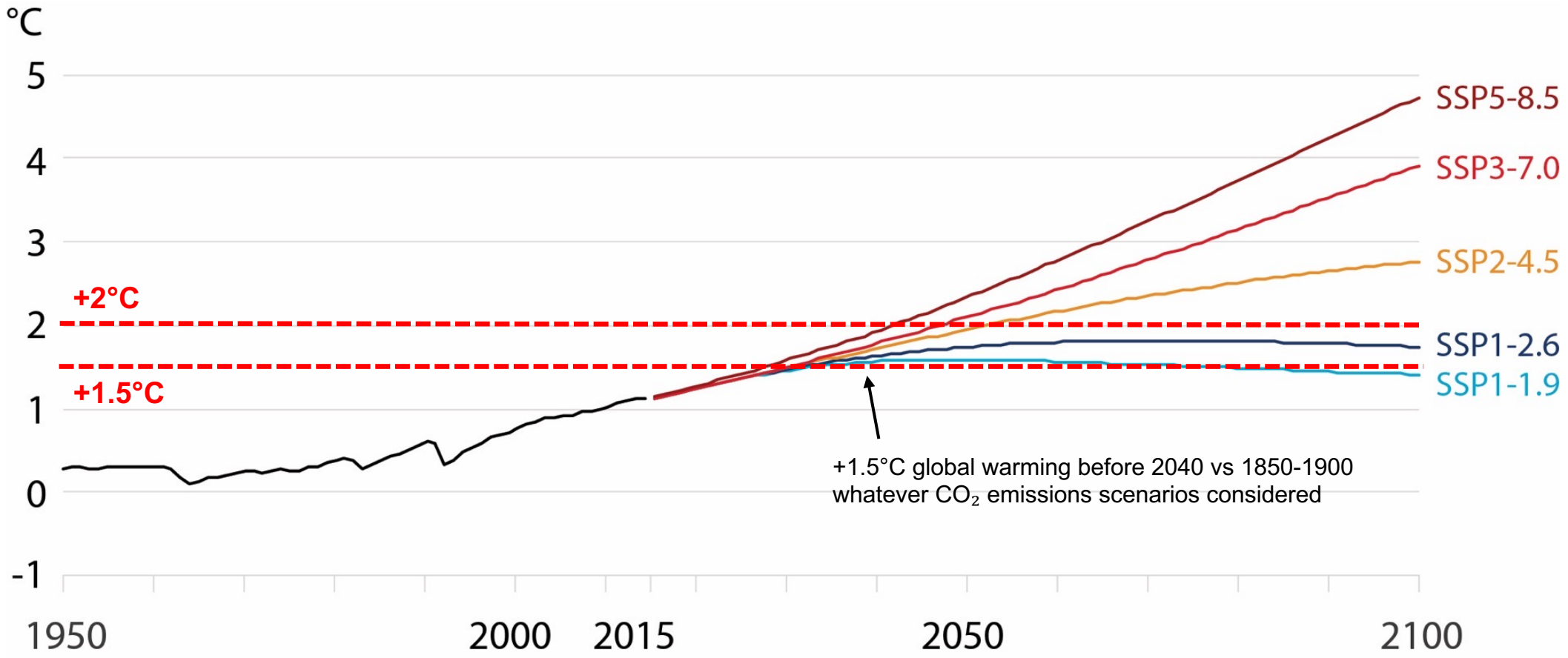
FIER IS MORE THAN BEING PROUD



GLOBAL WARMING WILL CONTINUE



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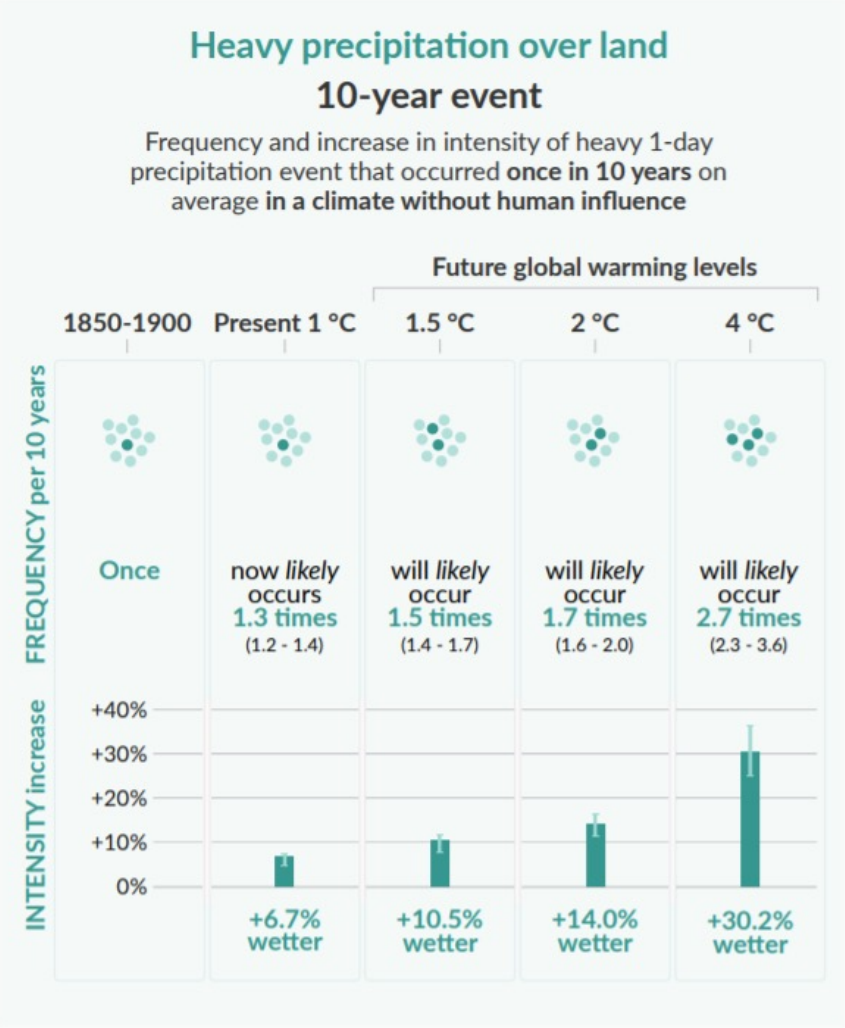
HEAVY IMPACTS ON PRECIPITATIONS



Every increment of warming

more frequent & more intense extremes

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INCREASED FLOOD RISK

INCREASED FLOOD RISK

Germany, July 2021

Belgium/France, November 2023

Netherlands/ Belgium July 2021

Norway, August 2023

FIER IS MORE THAN BEING PROUD

The Interreg North Sea project FIER aims to **enhance societal resilience for and limit the impact of climate-induced floods**.

This will be achieved by **fostering behavioural change** and **bolstering crisis management infrastructure**. Crucial ingredients in developing a more complete Multi-Layer Safety Approach.

Drawing from past EU projects and recent crises, FIER will develop new and innovative action plans and robust frameworks tailored to the North-Sea region. By the project end, participating regions aim to see a **significant boost in societal resilience** and **enhanced flood management capability**.

3 WORK PACKAGES

Work package 1

Awareness raising and promoting **self-efficacy** for climate-induced flood crises

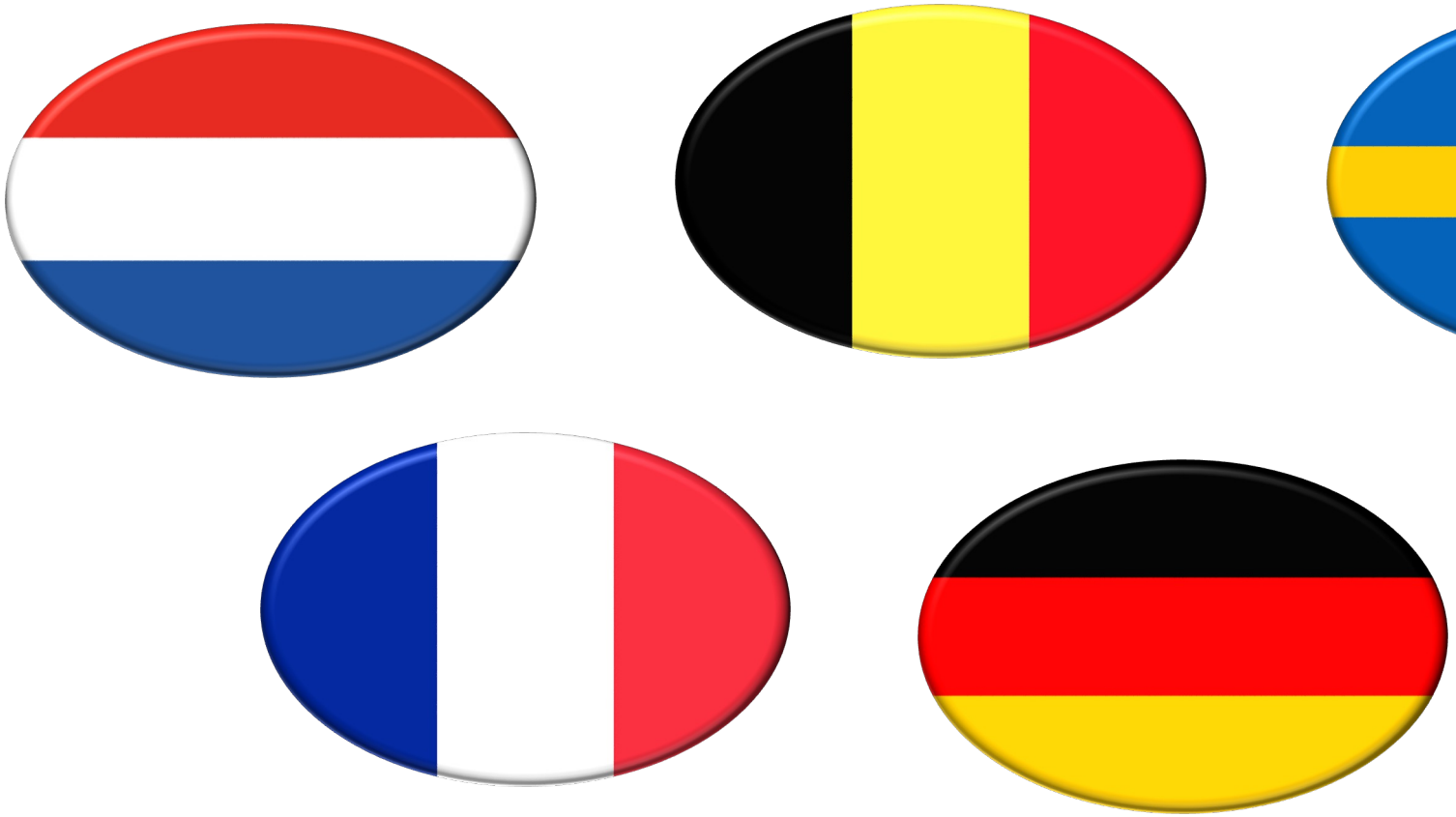
Work package 2

Improved **emergency response** during climate-induced flood crises

Work package 3

Enhancing capacities for **resilient recovery** after climate-induced flood

STRONG PARTNERSHIP



5 COUNTRIES

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STRONG PARTNERSHIP

Provincie Zeeland

Dordrecht

Builders for Society
École d'Ingénieurs

ibz
Federale Diensten
Gouverneur West- Vlaanderen
Dienst Noodplanning

Jade Hochschule
Wilhelmshaven Oldenburg Elsfleth

VeiligheidsRegio Zeeland

Federale dienst Gouverneur
Oost-Vlaanderen

SYMSAGEB
Etablissement Public Territorial de Bassin du Boulonnais

Karlstads Universitet

Torsby Kommun

10 PARTNERS

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CASE - City of Dordrecht

Situation

Dordrecht is the oldest city of Holland, rich in history and culture, **located in the Rhine-Meuse-Scheldt delta** (Western Netherlands) in the Dutch province of South Holland. Due to its location, the city has always had a strong relation to water, also explaining its important **focus on water safety**.

Challenges

- **Raise** climate induced flood **awareness** & develop **self-efficacy**
- Improve crises **preparedness** & **evacuation plans**

Impact FIER

- Improve all areas for **water safety resilience**
- **Communication**
- **Evacuation** strategies

Already Happening

- **Water safety Festival** 'For the Flooding', 'High and dry' route
- **Educate children** to educate parents

CASE – Province of Zeeland

Situation

The province of Zeeland is situated in the southwest of the Netherlands and is effectively a number of **peninsulas** and **islands**. In **1953** they faced a **disastrous flood**, which has led to the development of the Dutch Delta works. People feel safe now and the **perception of risks** is **low**. However, due to climate change, the **risk of flooding is increasing** again.

Challenges

- Improve **risk perceptions** and **self-efficacy**
- Develop better **emergency response** considering **road infrastructures**

Impact FIER

- Design requirements for **road infrastructures**
- **Improve cooperation** within national organizations & cross-borders organizations (Flanders & Zeeland)
- **Recovery plan** for non and slightly flooded areas

Already Happening

- **Examination flood risks** for critical infrastructures

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CASE – SYMSAGEB

Situation

The Boulonnais territory is located in the North of France, close to the sea. It has **faced many floods** over years. It's composed with a **dense network of** small streams and **rivers.** During heavy rains, **water rises suddenly causing floods** over several hundred hectares. In November 2023, Boulonnais territory faced extremes rainfalls with huge impacts.

Challenges

- **Raise** climate induced flood **awareness** & develop **self-efficacy**
- Improve **flooding crisis management**
- Increase **resilience**

Impact FIER

- Better **awareness** & **self-efficacy**
- Municipalities **emergency response plans**
- **Reduced** citizens & companies **vulnerability**

Already Happening

- Raise **flood awareness among children** to also reach parents
- Work with municipalities on **emergency response plans**

CASE – FDG West-Vlaanderen Dienst Noodplanning

Situation

West-Flanders is the westernmost province of Belgium, and the only province bordering the North Sea. The area is therefore **subject to multiple flood risks**: fluvial, pluvial & North Sea related. Due to climate change, there is a **clear rise in** the **occurrence and severity of floods**, with the flood crisis of November 2023 as a stark reminder.

Challenges

- Multiple **flood risks** & **increased probability**
- Low **awareness**, **self-efficacy**
- **Transnational cooperation**

Impact FIER

- Increased **risk awareness** & **preparedness**
- Emergency plans for **better crisis management**
- Improved flood **data exchange** with **cross-border** organizations (first Zeeland, later extending to France)

Already Happening

- Long lasting **cooperation** between **Flanders & Zeeland**
- National **cooperation of water actors** during Nov 2023 crisis

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CASE – Torsby municipality

Situation

Torsby is located in the north of the province of Värmland **in a valley**. It's a **wide municipality** covering 4 162,2 km² with population spread over the area. There is a **dam** with risks of breakthrough.
One challenge is to **reach out** all **the population** to share information. **Crisis management** is also key, to make sure people adopt right behavior at the right time.

Challenges

- **Communicate** & inform on **flood risks**
- Improve **crises preparedness** & **evacuation** plans

Impact FIER

- **Get the right info** in the right way to citizens with the right communication tool
- Design **evacuation scenarios** and **strategies**
- Share **good practices** of floods management

Already Happening

- **Book bus** delivering library & other public services in the countryside which can be efficient **to reach out people**

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FIER = CONFIDENT

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FIRST DELIVERABLES EXPECTED
WORK IN PROGRESS

- **Stakeholder** and **governance analyses** of the targeted areas
- **Stakeholder engagement plans**
- Inventory of (good) **practices** in Europe that can serve as inspiration
- Analysis of **risk perceptions** among **citizens** and **stakeholders**

If you are a stakeholder in this area,
if you want to share ideas or best practices
contact us on LinkedIn

FOLLOW US

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Thank you

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Paragon FRDO

24/04/2024

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National Crisis Center mission

NATIONAL CRISIS CENTER: MISSION

- To increase the resilience of our society
- To organise emergency planning and crisis management at the national level
- To ensure active vigilance

The NCCN is a multidisciplinary, interdepartmental, inter-federal and internationally oriented organization which, from a central key position, responds to societal challenges, offers strategic support to all its partners in synergy with all security actors, and has efficient, appropriate infrastructure at its disposal to deal with crises of all kinds, regardless of their nature and dimensions.

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National Crisis Center partners

NATIONAL CRISIS CENTER: MISSION

- Federal Public Service Interior (FPS Interior)
- Federal Public Service Health (FPS Health)
- Federal Public Service Foreign Affairs (FPS Foreign Affairs)
- Federal Police (incl. Brussels Police)
- Civil Protection
- Regional and Community Crisis Centers
- Local Authorities (cities, provinces, police zones, fire departments)
- Healthcare Providers and Hospitals
- Military
- International Partners and Organizations (NATO, EC.)

PARAGON

National security platform

- What is a security platform?
  - Cooperation between all disciplines of Belgium
  - Crisis/national preparation + Crisis management
  - + Database of emergency plans

- Tackle a crisis as soon as possible!

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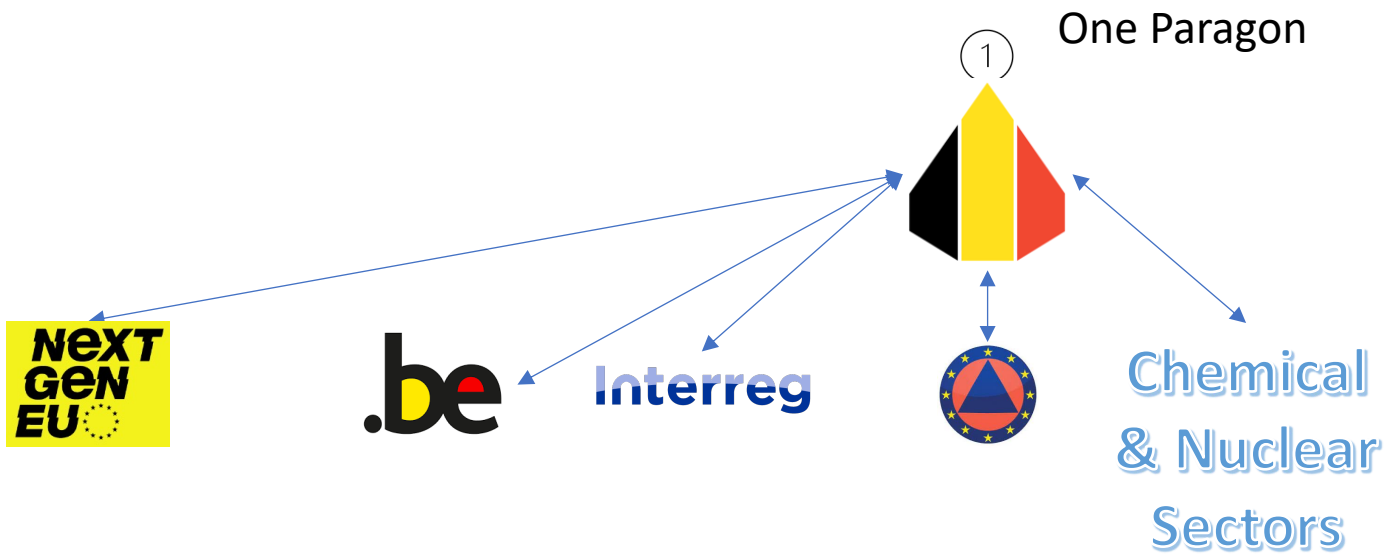
PARAGON FRDO

Funding?



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PARAGON

Paragon key objects

Anchors

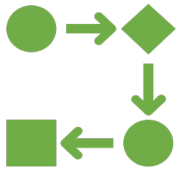
Contacts

Widgets

Maps

Emergency Plans

Feed



Case

Logistics

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Centre de crise National

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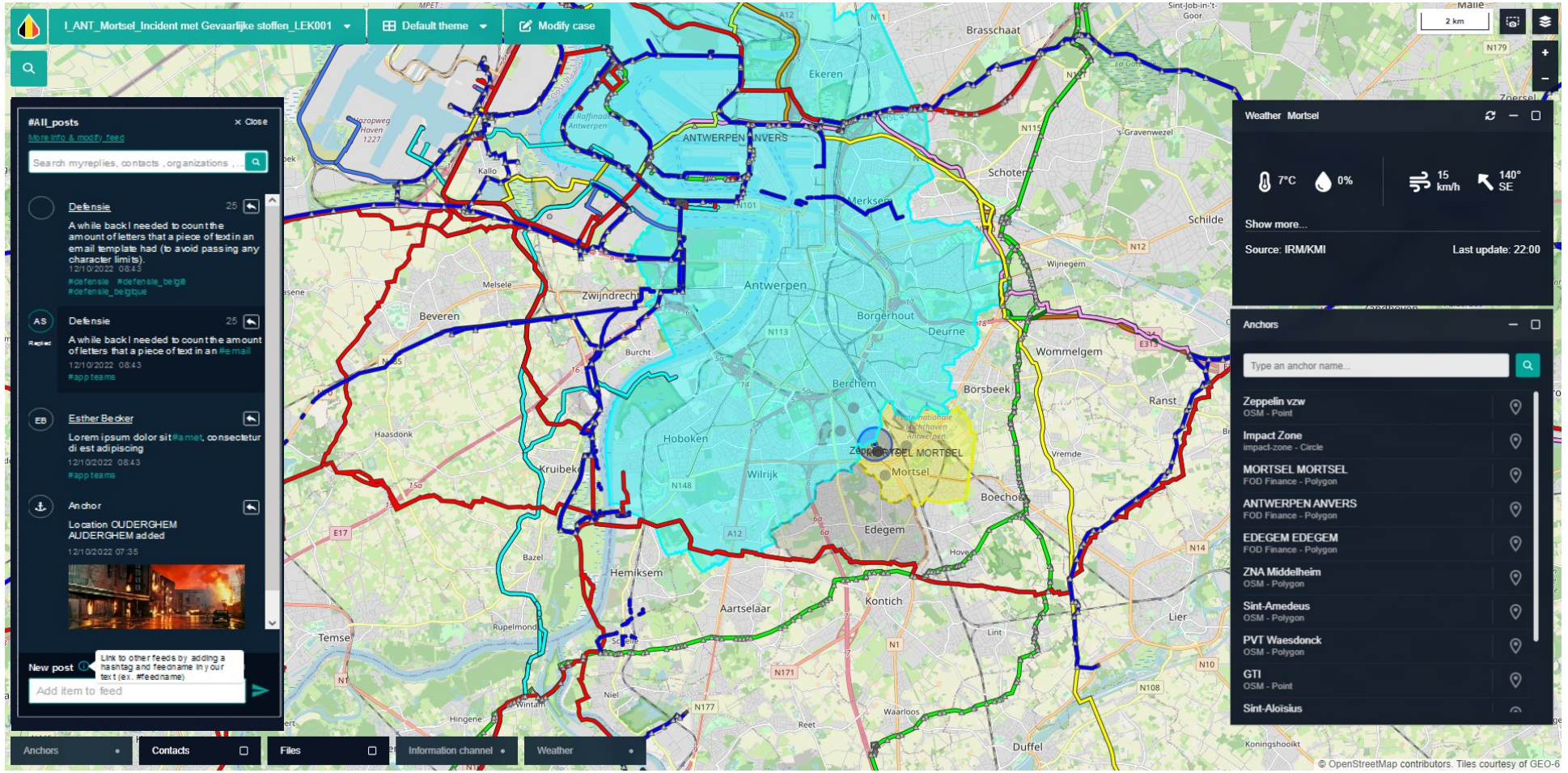
PARAGON FRDO

Screenshot COP



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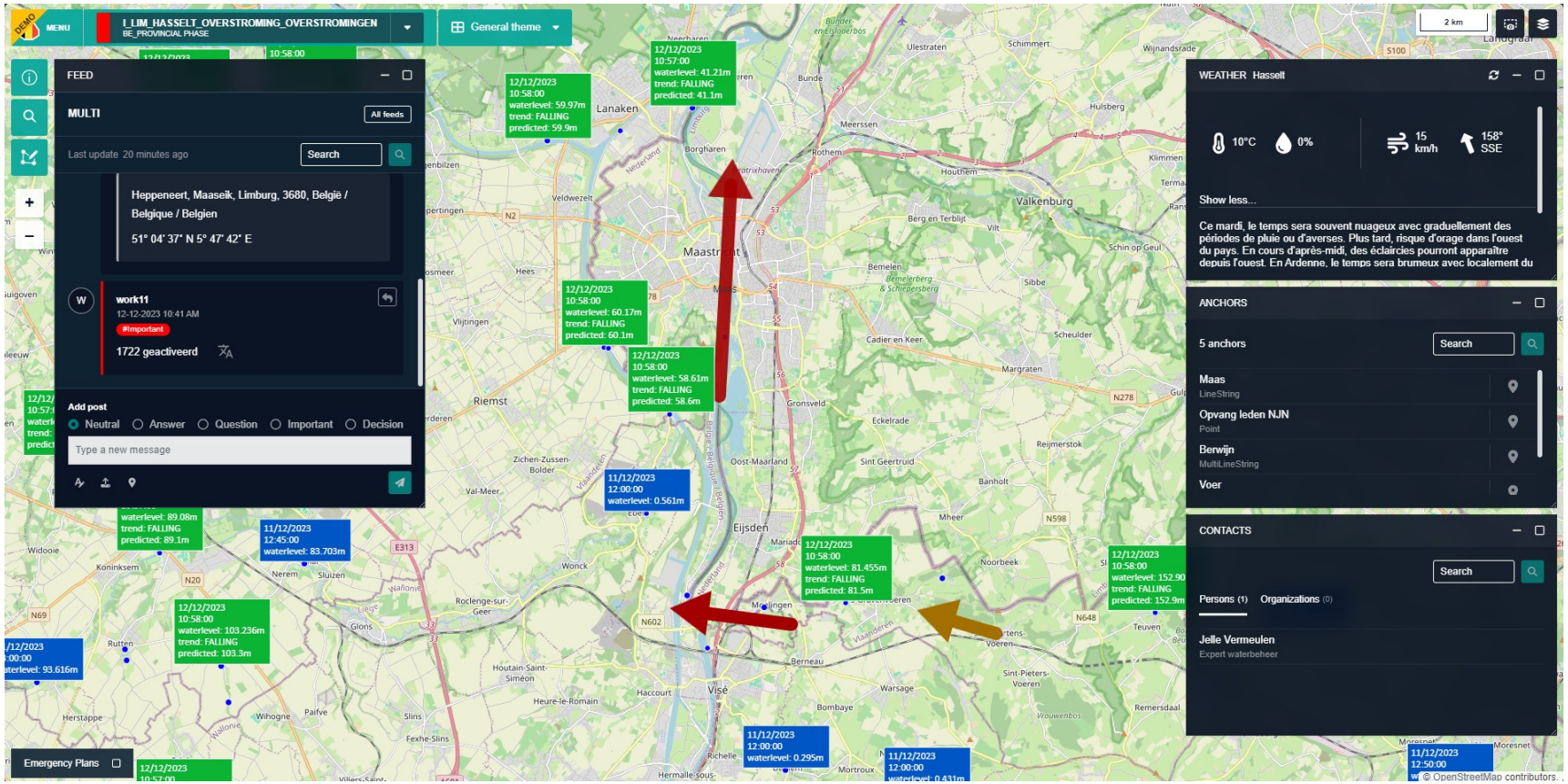
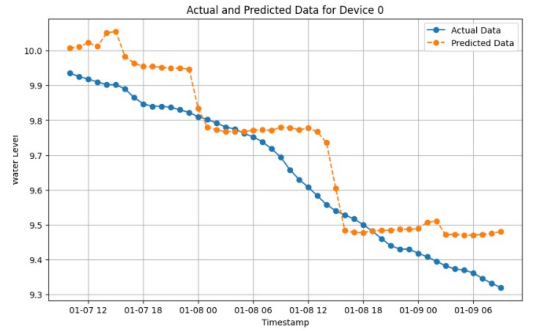
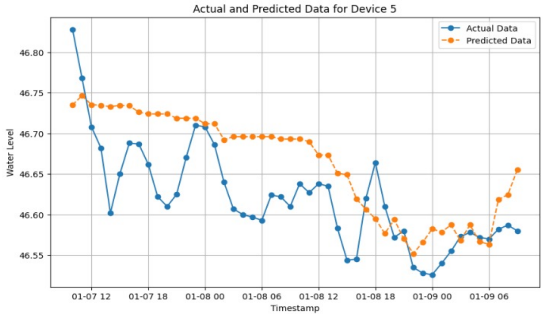
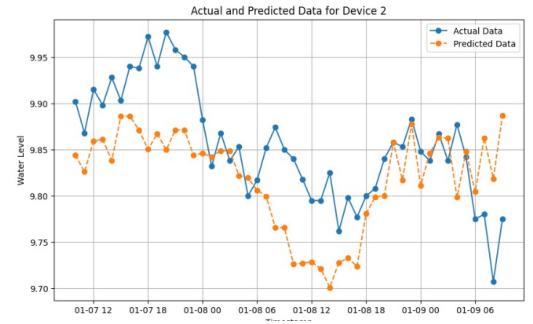
Screenshot Flooding info









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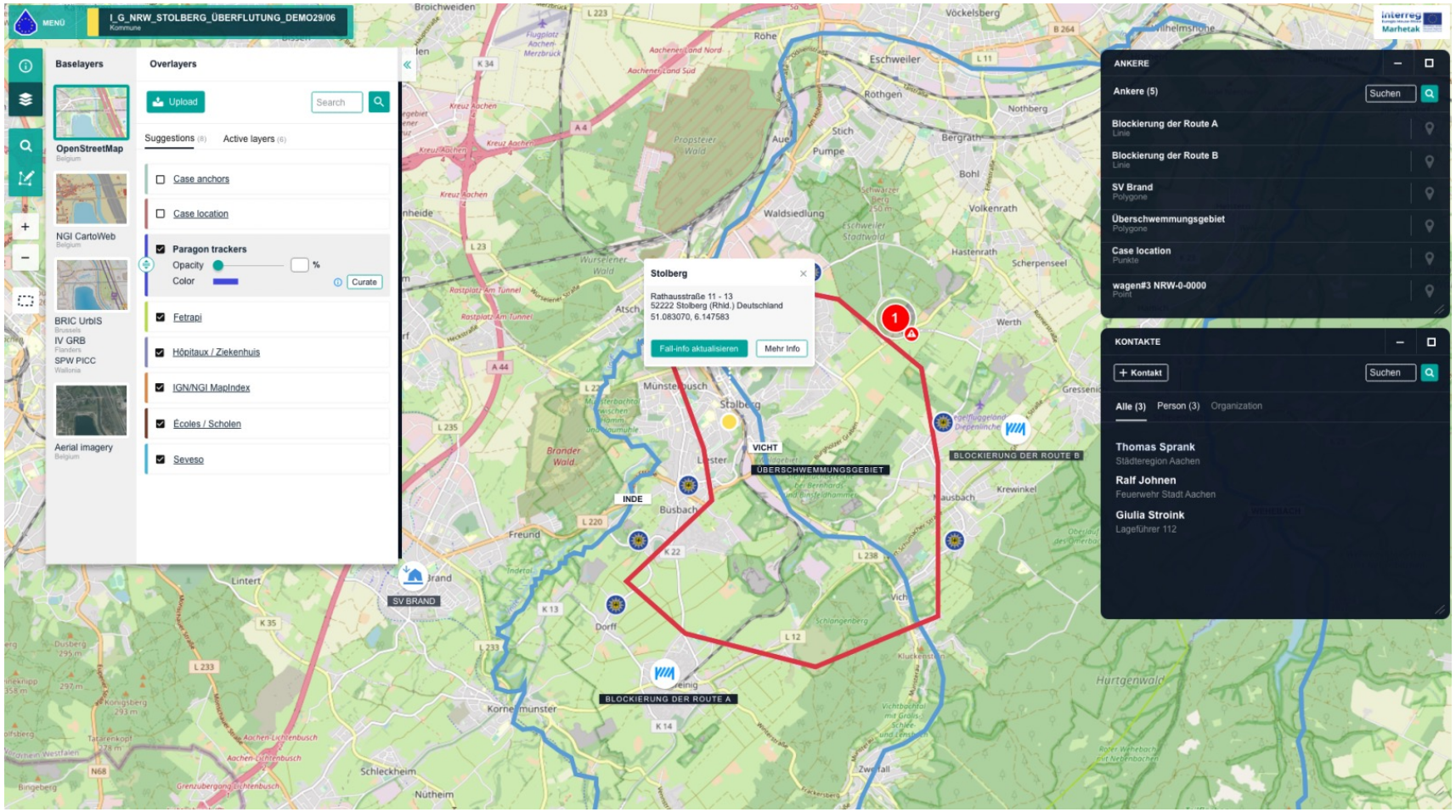
Screenshot Anchors



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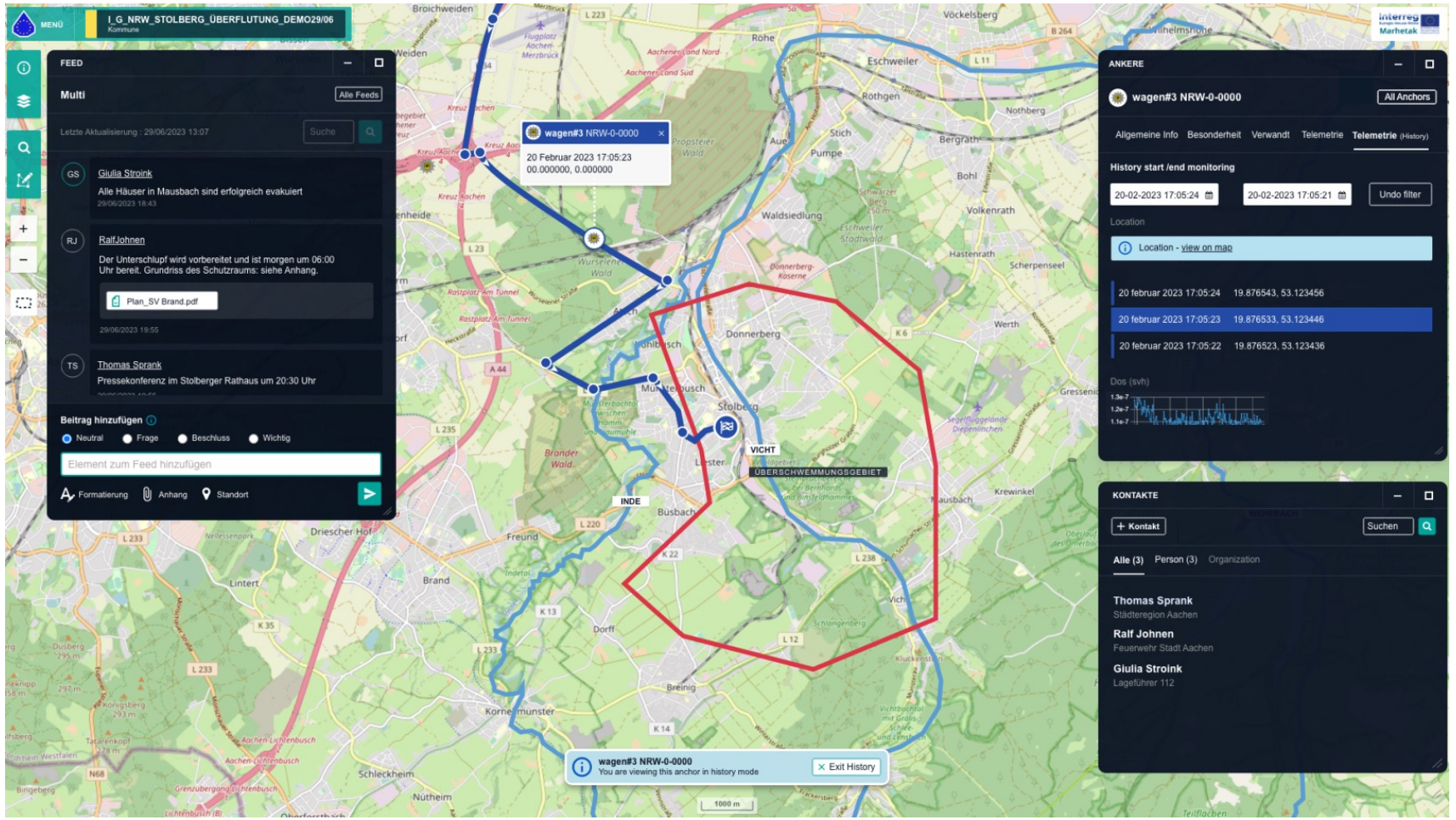

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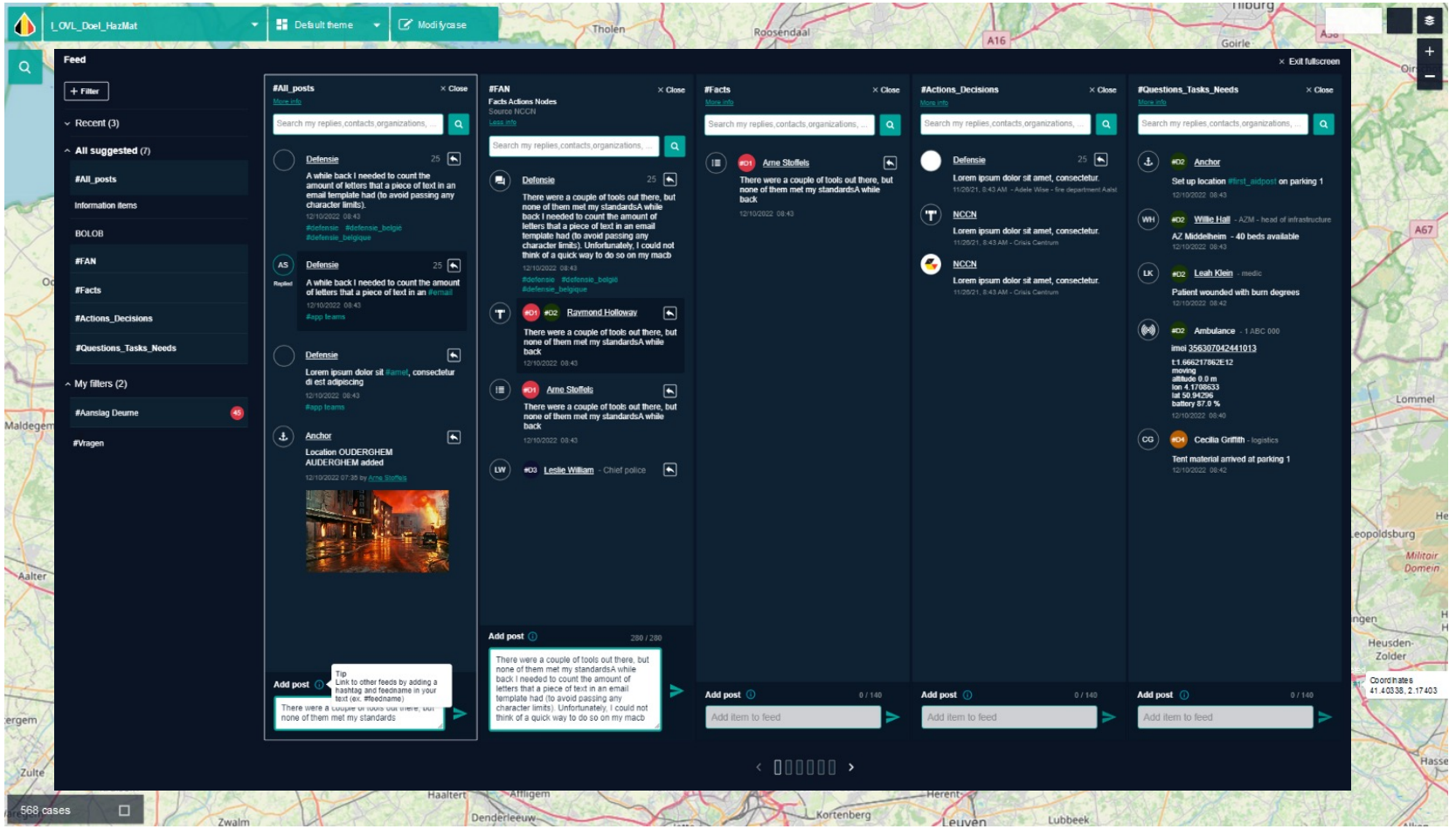
Screenshot Feed



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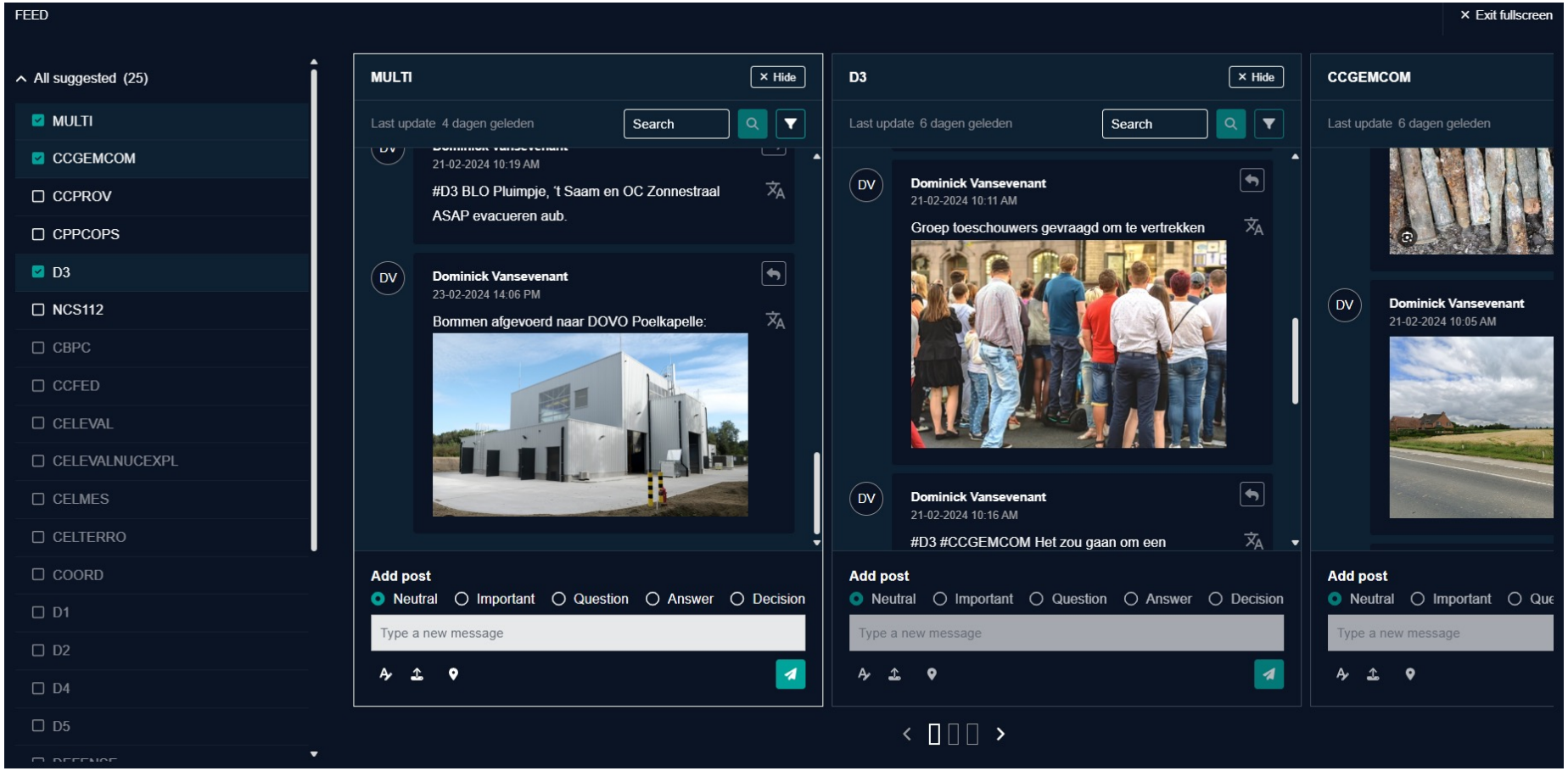
Screenshot Feed



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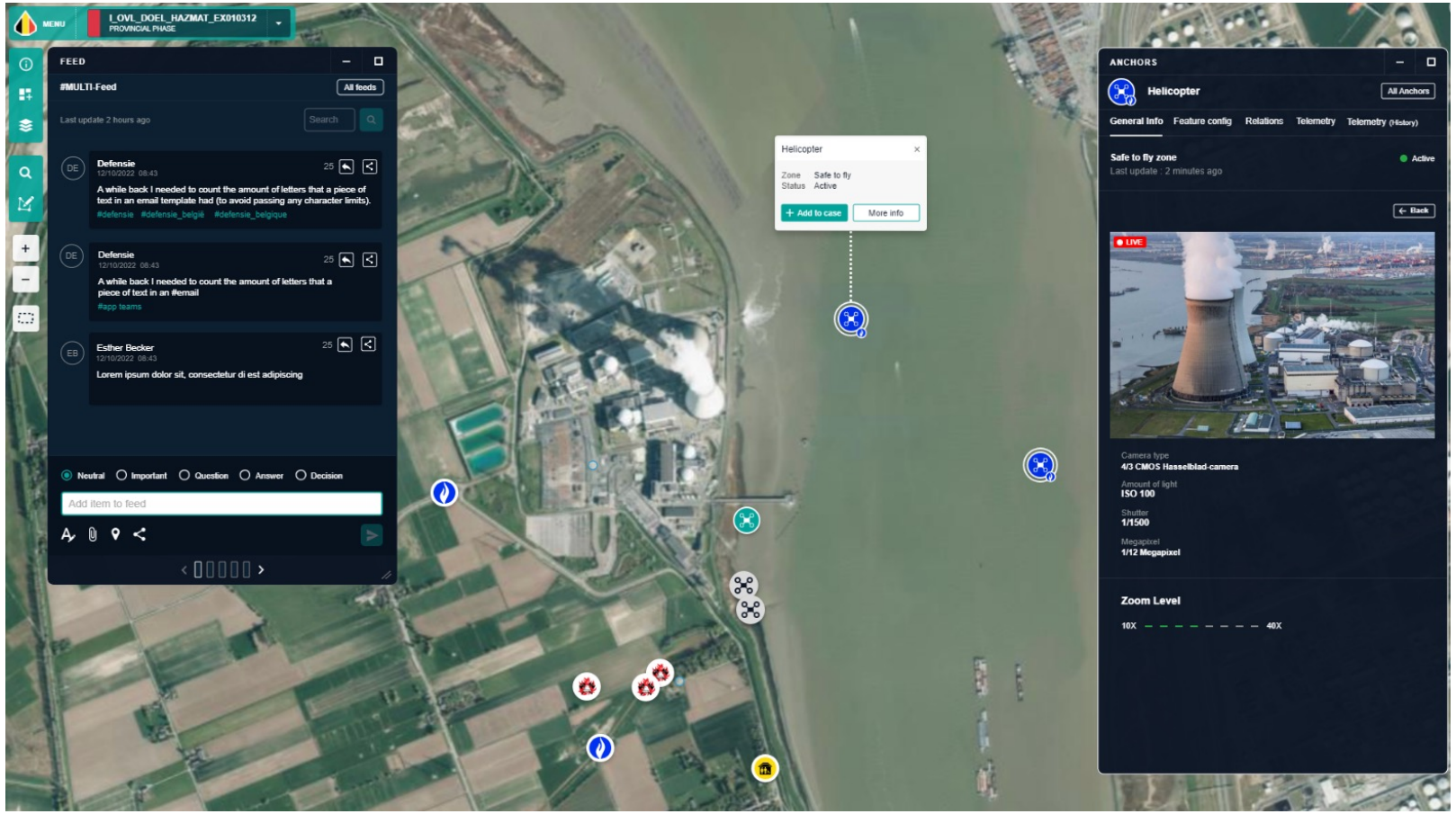
Mockup drone



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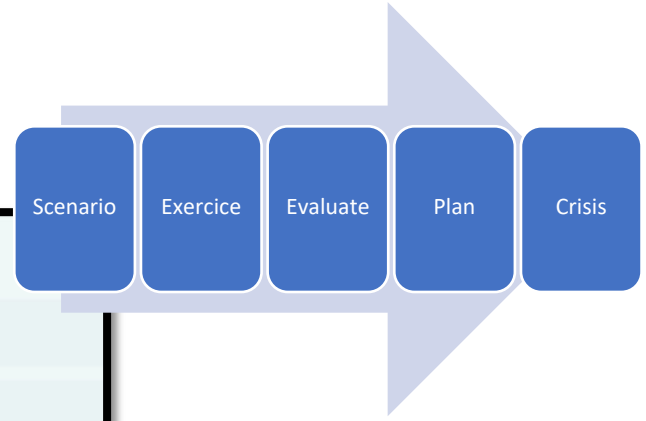
Screenshot Exercise module



- **Exercise module**
- Logistics
- NLP/ML in Feed

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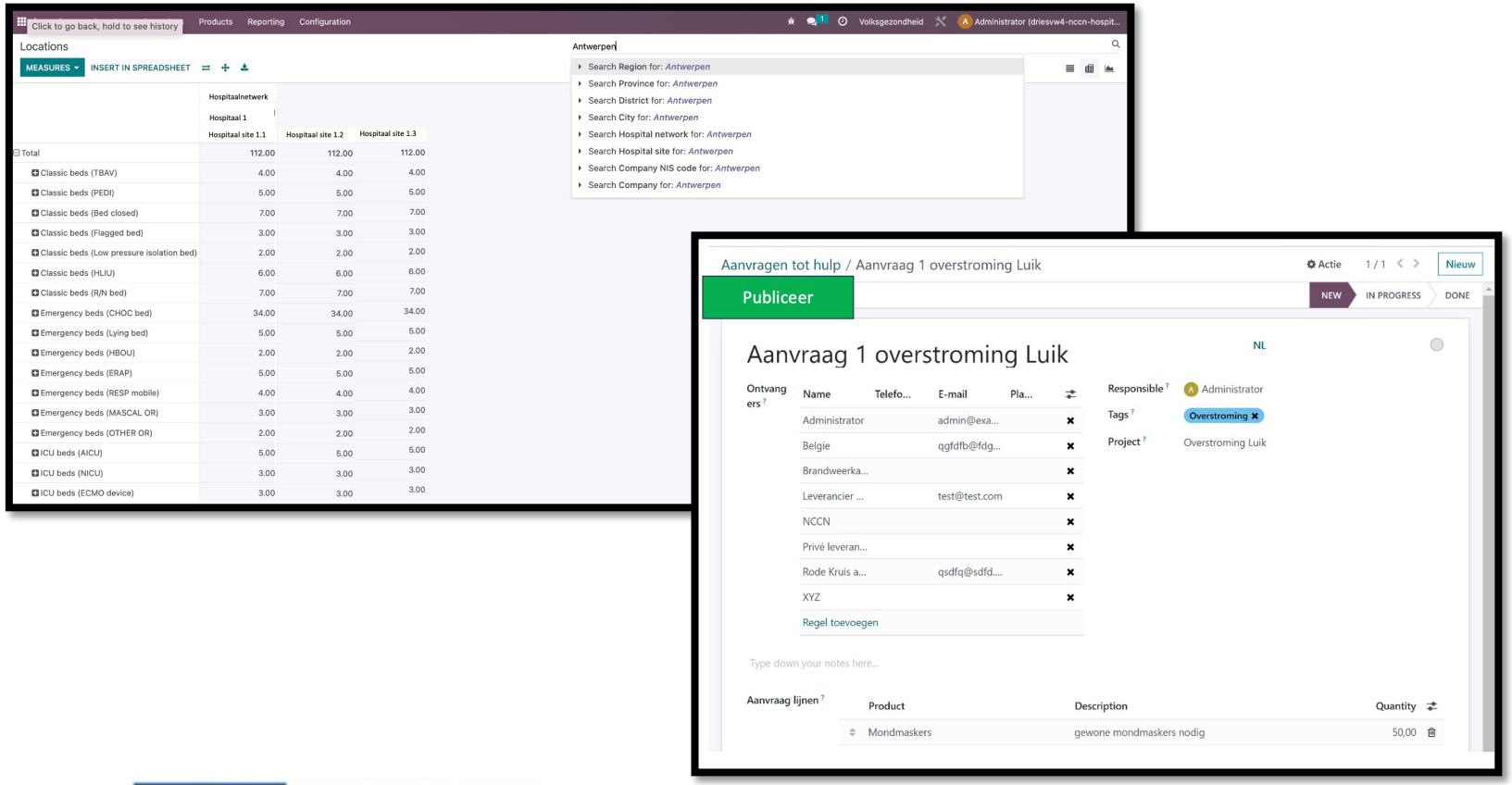
Screenshot Logistics

- Exercise module
- **Logistics**
- NLP/ML in Feed

Linking with ODOO ERP



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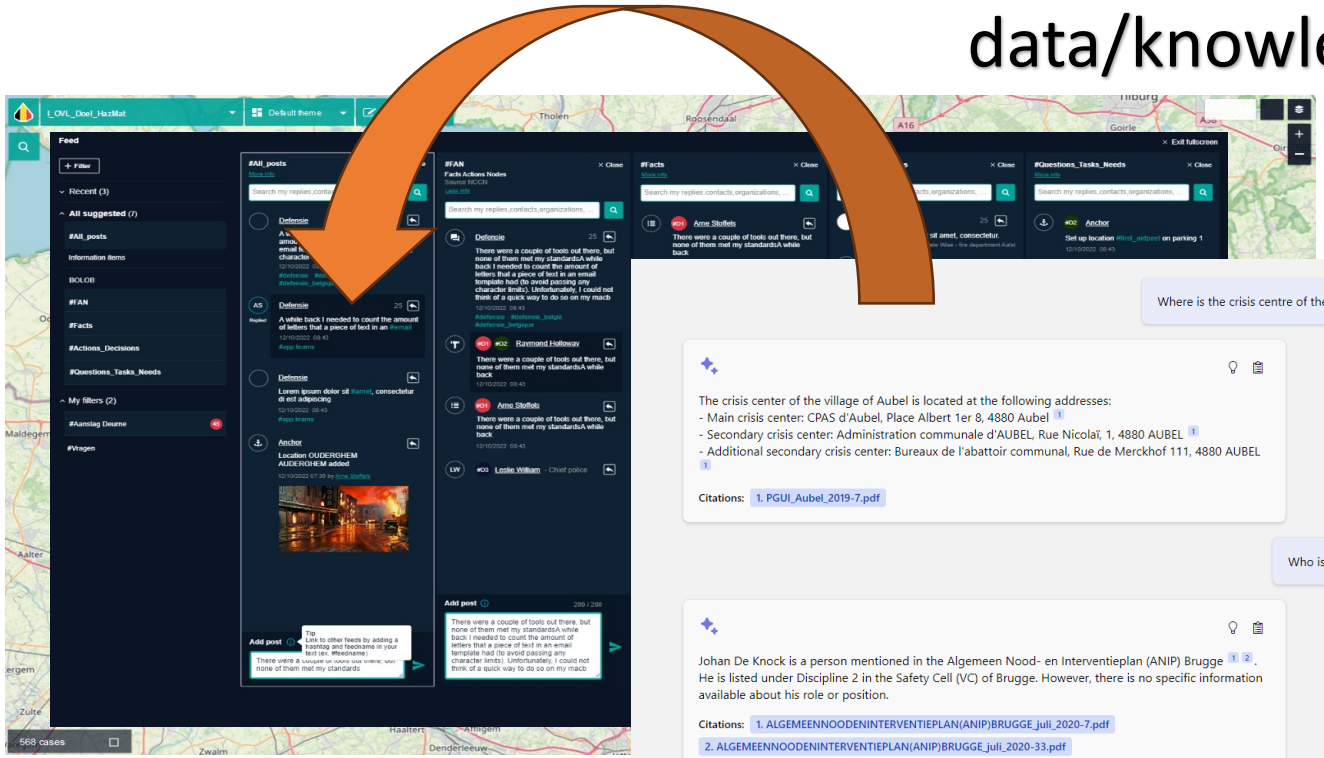
Screenshot AI

- Exercise module
- Logistics
- **NLP/ML in Feed**

Structure and use data/knowledge



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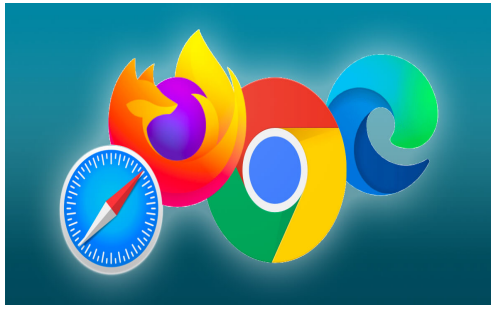
Paragon technical

Open source based



Webbrowser

Multilingual

Responsive design

Scalable

Join the Paragon revolution!

For more information, contact the Paragon team:

martijn.mol@nccn.fgov.be

https://crisiscentrum.be

@CrisiscenterBE

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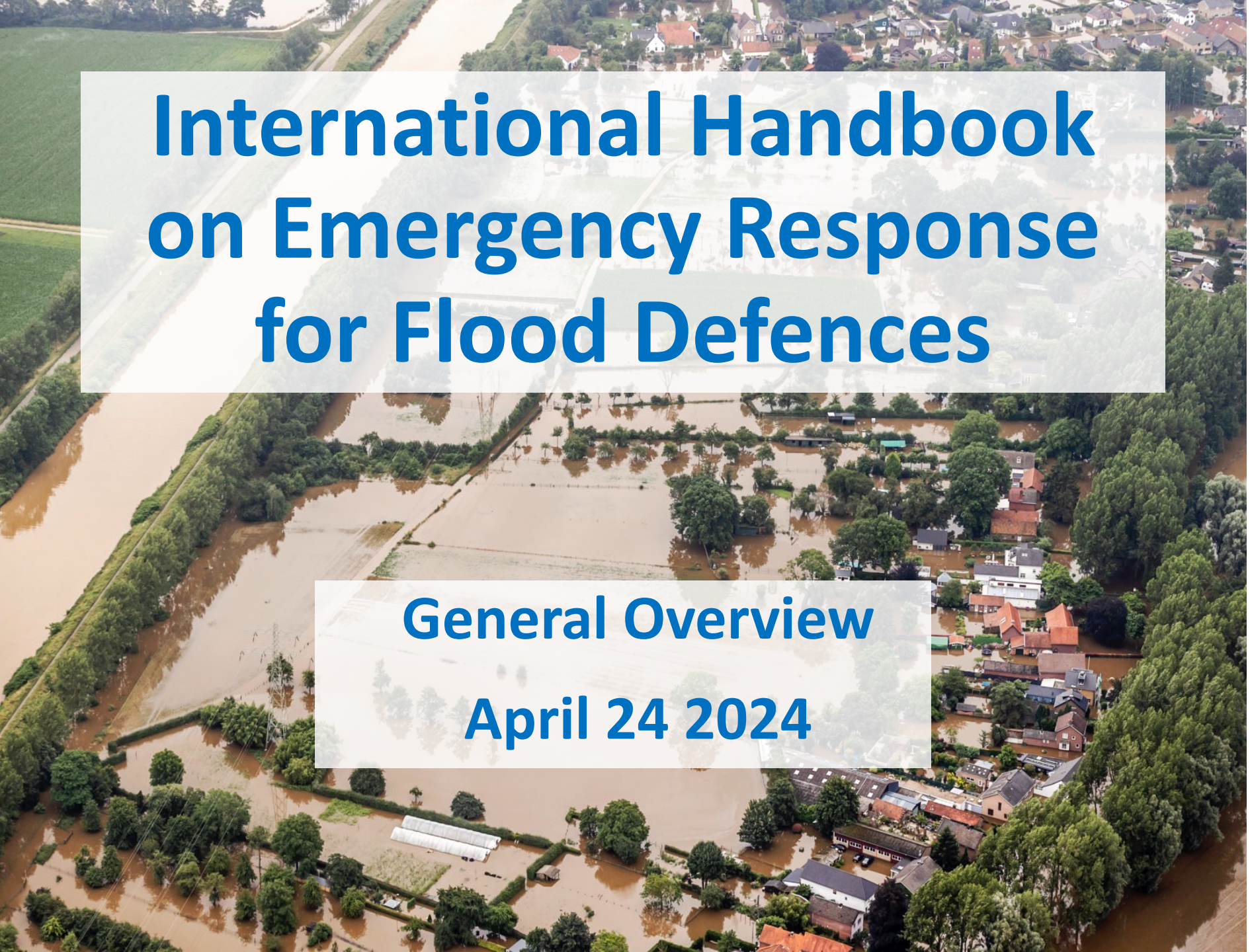


International Handbook on Emergency Response for Flood Defences

General Overview

April 24 2024

1. Objectives of this presentation

- To present the scope of the handbook
- To provide some background to arriving at the handbook
- Arriving at a Community of Practice
- Using the handbook
- Dissemination and feedback

Where did it start?

- A national community with a large international network
- Idea for an Emergency Response Handbook arose in 2016 (Exercise Waterwolf)
- During the international FloodRisk conference 2020 (Budapest) we made a big step forward
- Positive reactions from Japan, Germany, USA Belgium, England and of course the Netherlands: community of willing
- Polder2C (Interreg project) as a boost to create a community of committed
- Corona was surprisingly very instrumental to work virtual and effective together over many time zones

Interreg
2 Seas Mers Zeeën
Polder2C's European Regional Development Fund

Why do we need a Handbook Emergency Reponse for Flood Defences?

- Floods pose serious threats to societies.
- Increasing scale of floods → requires external or even international assistance.
- Different response approaches are available worldwide → Need for sound inventory.
- Number of well trained practitioners/flood fighters decreases → Need to document knowledge and experience.

Need to join forces to be able to react, learn and cooperate appropriately and effectively → we need a handbook!

2. Scope of the handbook – high level

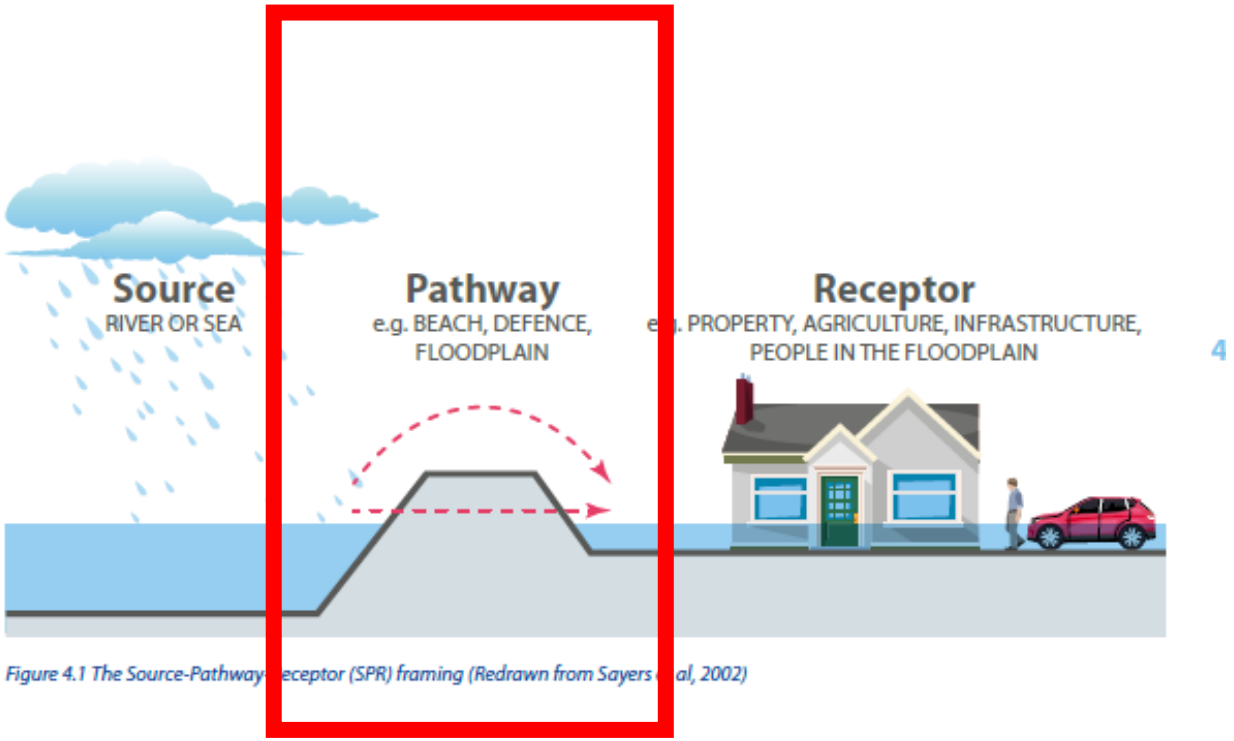


Figure 4.1 The Source-Pathway-Receptor (SPR) framing (Redrawn from Sayers et al, 2002)

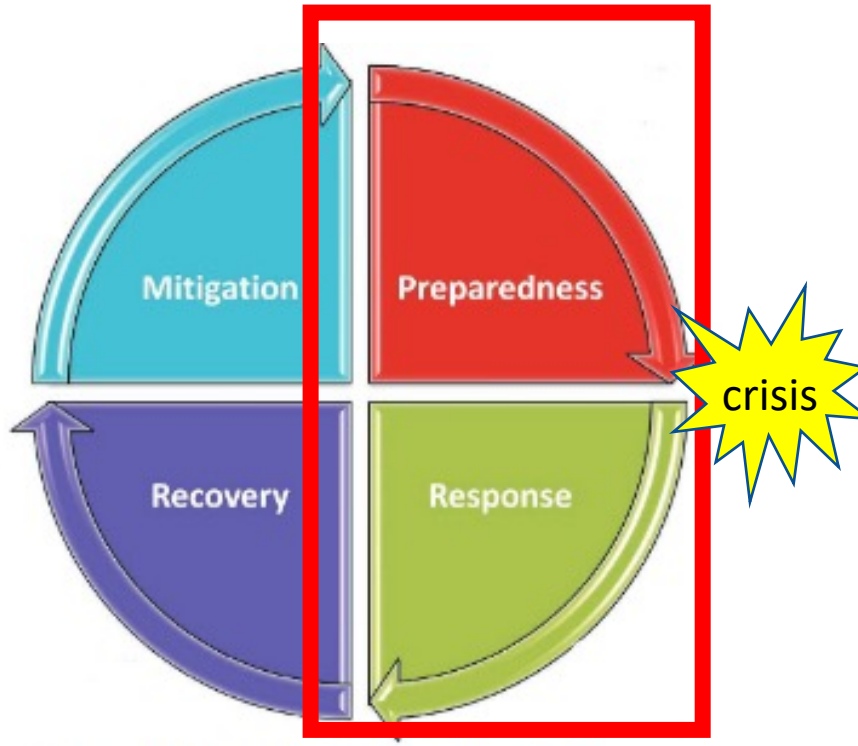


Figure 6.1 Emergency management life cycle

The ultimate goal

OUTPUT

- Handbook free for all flood defence managers worldwide.
- Effective international network for exchange of flood fighting staff and equipment.
- Sharing experiences with mutually developed ways of working and procedures.

OUTCOME

- Better prepared crisis organisations knowing how to act best in emergency situations regarding their flood defences.
- Reducing risk of flood by failure of flood defences.
- Less casualties, loss of property and disrupting of society

GOAL

- International guidance and collaboration for practical implementation of sound emergency measures during flood situations.
- The handbook to become an invaluable tool to help flood defence managers to prepare for and act during flood events.

Target audience

Flood Defence Managers
- Patrollers / inspectors
- Operational staff (early warning)
- Advisors (e.g. risk, geotech)
- Responders
- Crisis management

National Authority
- Flood forecasting
- Civil Security
- Crisis planning
- Crisis management

Local Authority
- Crisis management evacuation
- Rescue and relief
- Crisis communication

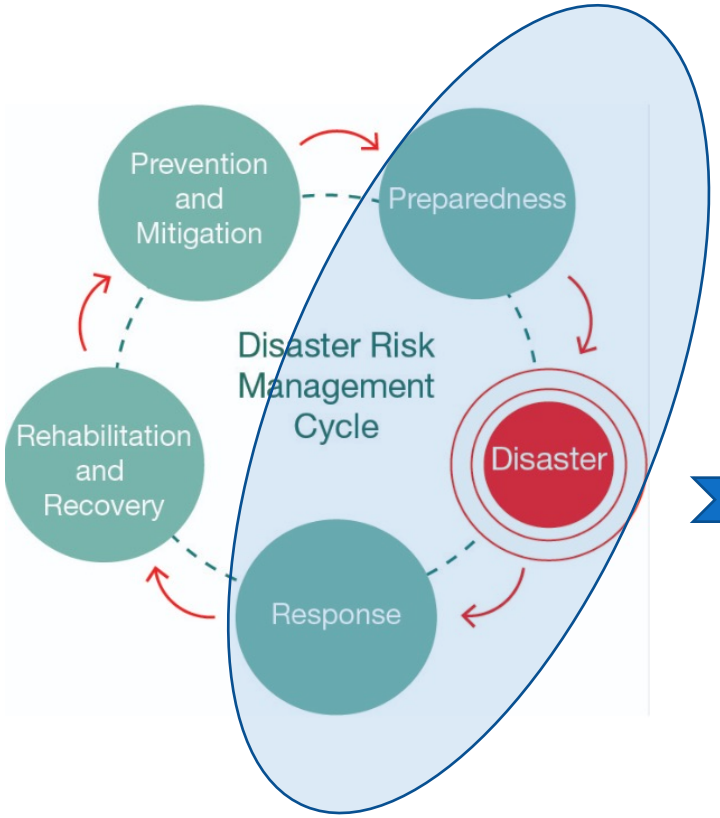
Military
- Response
- Rescue and relief
- evacuation

Public

Primary Audience

Secondary Audience

3. Background - Contents & structure



1. Introduction
2. Flood emergency response management
3. Preparedness
4. Response
5. Flooding threats
6. Flood defences
7. Crisis communication
8. Assessing and inspecting
9. Understanding the problem
10. Selecting and designing measures
11. Logistics and implementation
12. Health, safety and wellbeing
13. Reliability of emergency measures
14. Knowledge-sharing & collaboration
15. Funding
16. Concluding remarks

3. Background - Strong international input

AUTHORS & REVIEWERS

- **Netherlands**
- **Japan**
- **USA**
- **United Kingdom**
- France
- Germany
- Greece
- New Zealand
- Poland
- Portugal

CONTRIBUTIONS / CASES

- **Netherlands***
- **Japan***
- **USA***
- **United Kingdom***
- Bangladesh
- Belgium
- Egypt
- France
- Germany
- Greece
- Guyana
- India
- Kenya
- Mozambique
- New Zealand
- Philippines
- Poland
- Portugal
- Romania
- Slovakia
- Vietnam
- Zimbabwe

* Rijkswaterstaat, MLIT, USACE and EA contribute financial and therefor considered to be the “owners”. A Letter of Intent to arrange this is under construction.

Ownership

- Dutch Rijkswaterstaat: overall project management and –coordination
- UK Environment Agency: contracted lead author
- United States Army Corps of Engineers: graphic design
- Japanese MLIT: publishing process

- Each partner contributes for around the 50 k€ (in kind or via budget) so total costs producing this handbook estimated on 200 k€.

- Via a “letter of intent” we will make agreements on future management of the handbook

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]

3. Background - Committed team

+ more than 20 independent experts

4. Arriving at Communities of Practice

For the CoP, the following needs to be clear:

Objective – main objectives & success indicators

Audience – which groups: regional communities and a one mondial community?

Organisation – processes / agreements / responsibilities

Support – tasks & tools

4. Arriving at a CoP - Objective

To develop, share and benchmark knowledge, experience and tools / approaches regarding “life cycle flood risk management (preparedness, response, recovery and mitigation)”.

Success indicators:

- Short term: Publishing of an International Handbook

Long term:

- (bi-) annual conferences, webinars, brown bag meetings
- newsletter
- Coordinate R&D efforts
- Incident Observations – hands on sharing of experiences

4. Arriving at a CoP - Organisation

Processes / agreements / responsibilities

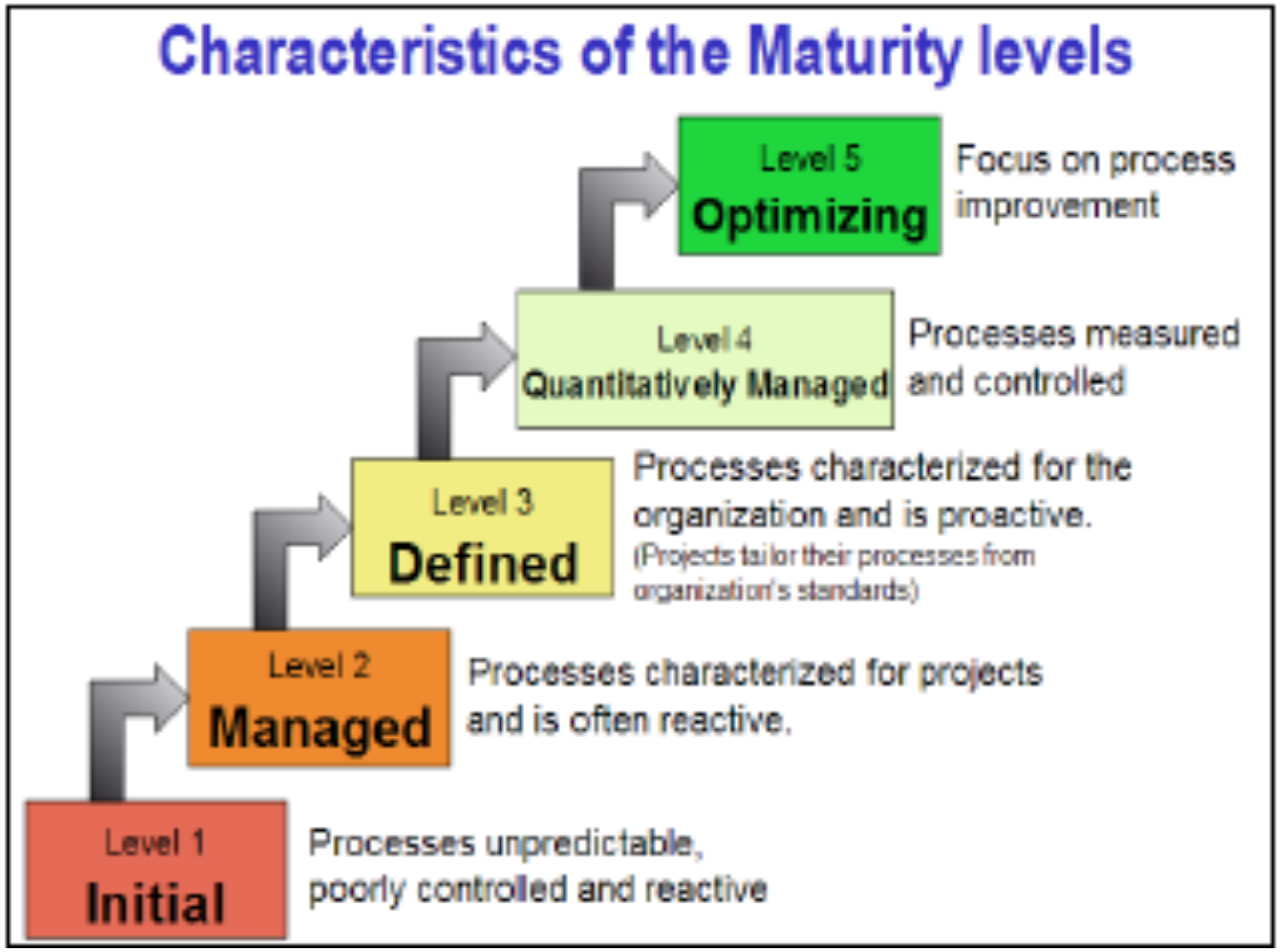
We need:

- Articles of association
- Mission & vision
- Organigram & who is who
- (Multi) annual plan

We need:

- Board – supervisory, safeguarding
- Working committee – “work force”
- Secretariat – point of contact
- Linking pins / members - community

5. Using the handbook



We consider a extra “guideline for self assessment” to help end users to implement the handbook

We want to use the concept of Maturity Levels :

- For each chapter (2 – 15) the most important 3-5 competencies will be de defined.
- For each competency up to 5 levels of maturity will be defined.

6. Dissemination and feedback

- The big challenge for coming months will be: how are we going to disseminate the IHERFD
  - First opportunity Singapore International Water Week (June 2024): oral presentation June 20th plus poster presentation Dutch pavilion
  - ICOLD meeting New Delhi
  - We try to get World Bank involved
  - Other suggestions?
- We have to decide either to have first a blueprint version, or call it a version 1.0 to make clear we need feedback to improve the handbook
- We want to invite users of the handbook to give feedback
- Then in a few years develop to a final version

Thank you for you attention