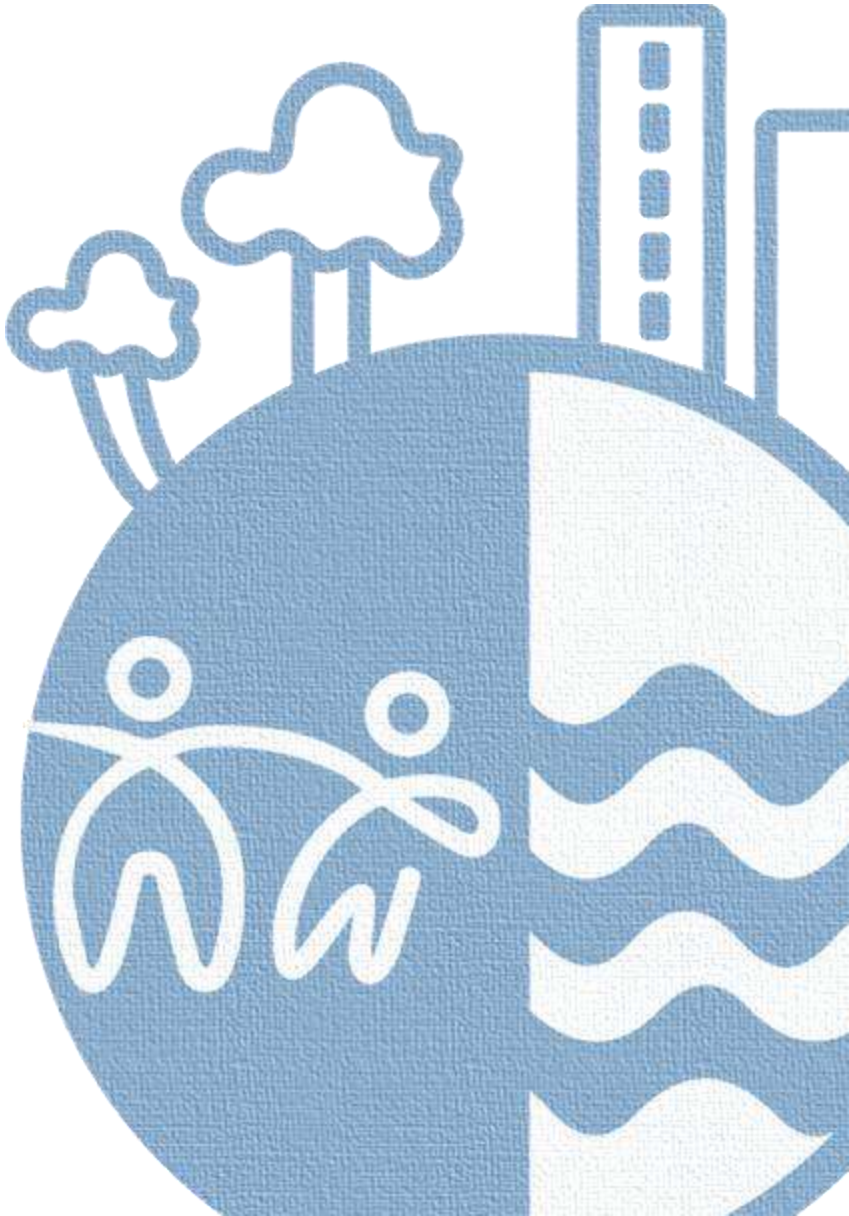
SOLARIS
SOLIDARITY IN CLIMATE CHANGE

Practitioners' guide



PG: What is it? What for?

The **Practitioners' Guide** is the final SOLARIS deliverable designed **to achieve impact and facilitate dissemination** of our results towards **practitioners, policy-makers and all stakeholder communities.** It can also be used for educational purposes.

It compiles :

- Handbook of case study fact sheets (produced in WP2)
- Main results of the cross-country comparison (WP3)

Aim today : to get your feedbacks :

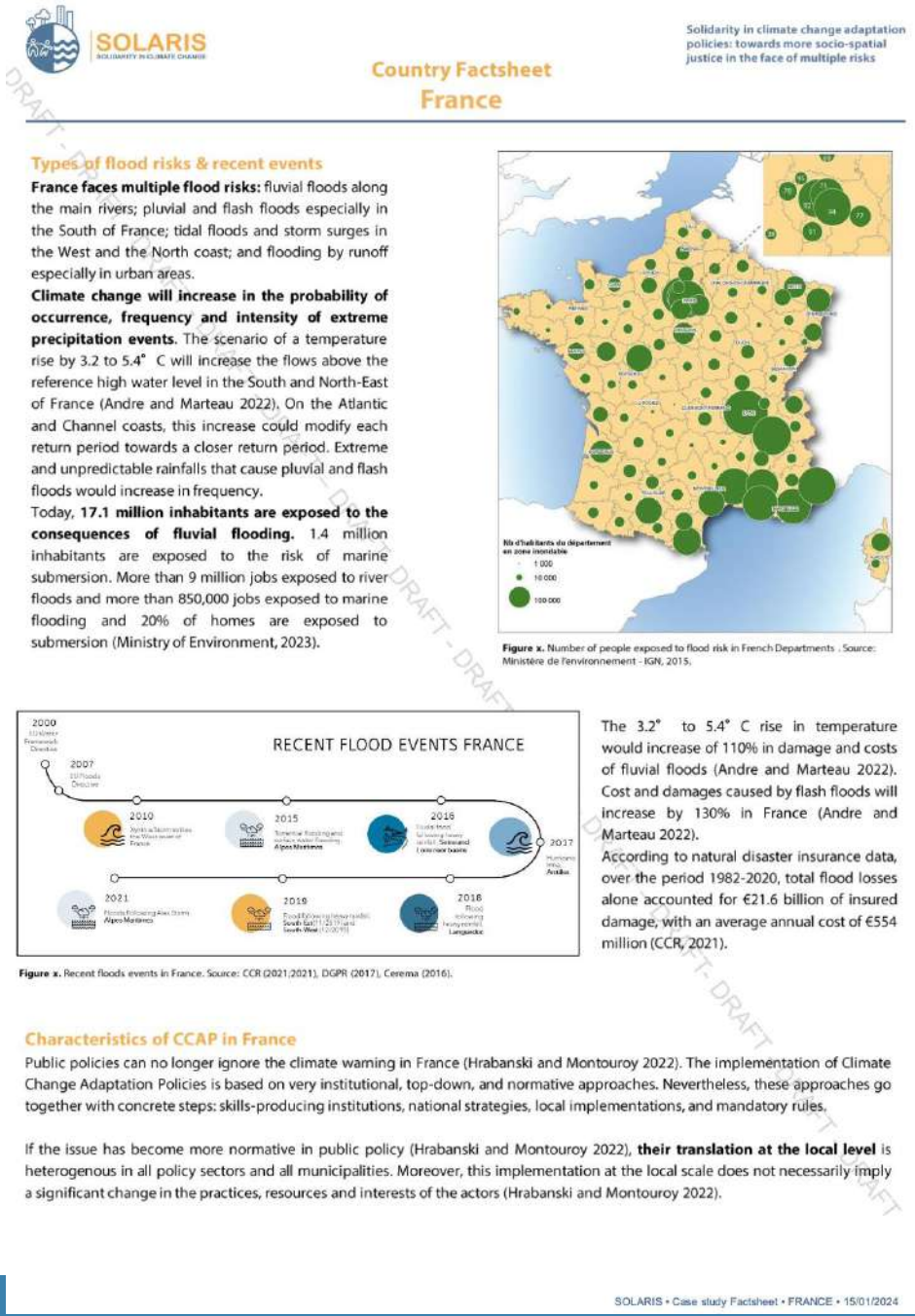
➔How to better reach practitioners and policy-makers audience?

➔ With what material/data from the SOLARIS project ?

PG in practice

2 main sections:

- **Section 1/Handbook of case study fact sheets**
  - 4 Country fact sheets
    - Country presentation
      - Types of flood risks & recent events, characteristics of CCAP
    - Main SOLARIS results at national level
      - How and when are issues of equality and justice addressed in FRM at the national level ? How does it link up with other policies, such as CCAP?
      - What role of participation?
      - What knowledge and capacity-building on social inequalities?



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Solidarity in climate change adaptation policies: towards more socio-spatial justice in the face of multiple risks

Country Factsheet
France

Types of flood risks & recent events

France faces multiple flood risks: fluvial floods along the main rivers; pluvial and flash floods especially in the South of France; tidal floods and storm surges in the West and the North coast; and flooding by runoff especially in urban areas.

Climate change will increase in the probability of occurrence, frequency and intensity of extreme precipitation events. The scenario of a temperature rise by 3.2 to 5.4° C will increase the flows above the reference high water level in the South and North-East of France (Andre and Marteau 2022). On the Atlantic and Channel coasts, this increase could modify each return period towards a closer return period. Extreme and unpredictable rainfalls that cause pluvial and flash floods would increase in frequency.

Today, **17.1 million inhabitants are exposed to the consequences of fluvial flooding.** 1.4 million inhabitants are exposed to the risk of marine submersion. More than 9 million jobs exposed to river floods and more than 850,000 jobs exposed to marine flooding and 20% of homes are exposed to submersion (Ministry of Environment, 2023).

Figure x. Number of people exposed to flood risk in French Departments . Source: Ministère de l'environnement - IGN, 2015.

RECENT FLOOD EVENTS FRANCE

Figure x. Recent floods events in France. Source: CCR (2021;2021), DGPR (2017), Cerema (2016).

The 3.2° to 5.4° C rise in temperature would increase of 110% in damage and costs of fluvial floods (Andre and Marteau 2022). Cost and damages caused by flash floods will increase by 130% in France (Andre and Marteau 2022).

According to natural disaster insurance data, over the period 1982-2020, total flood losses alone accounted for €21.6 billion of insured damage, with an average annual cost of €554 million (CCR, 2021).

Characteristics of CCAP in France

Public policies can no longer ignore the climate warning in France (Hrabanski and Montouroy 2022). The implementation of Climate Change Adaptation Policies is based on very institutional, top-down, and normative approaches. Nevertheless, these approaches go together with concrete steps: skills-producing institutions, national strategies, local implementations, and mandatory rules.

If the issue has become more normative in public policy (Hrabanski and Montouroy 2022), **their translation at the local level** is heterogenous in all policy sectors and all municipalities. Moreover, this implementation at the local scale does not necessarily imply a significant change in the practices, resources and interests of the actors (Hrabanski and Montouroy 2022).

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PG in practice

2 main sections:

- **Section 1/Handbook of case study fact sheets:**
  - 8 Case study fact sheets
    - Case Description
    - SOLARIS key issues in the case

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Case Study factsheet

Solidarity in climate change adaptation policies: towards more socio-spatial justice in the face of multiple risks

Beerse

Administrative region: Flanders
Timeline: 2011-2022
Type of flood: Pluvial and fluvial flooding
Surface area and number of households involved: 1.57 ha, ~60 households

Amsterdam
The Hague
Netherlands
Rotterdam
London
Antwerp
Ghent
Brussels
Belgium
Luxembou

Stakeholders involved

Province of Antwerp, Department of Integrated Water Policy: initiated the project, conducted modelling simulations to determine the optimal strategy to reduce risks, provided funds (75%) for land acquisition, organised participation events together with the municipality.

Municipality of Beerse: provided funds for land acquisition (25%), organised participation events together with the province.

Interreg CO-ADAPT: provided funds for participation and to hire consultancies.

Previous landowners: initially were not willing to sell their land for the flood retention area, extensive negotiation processes took place with the province.

Regionaal Landschap Grote & Kleine Nete: provided expertise on the history of the land, local landscape and vegetation, translated numerical modelling results to local residents, acted as a 'neutral' or mediating partner in negotiations.

Consultancies: specialised in stakeholder engagement to support participation events.

Approx. 60 residents: involved in the design of the flood retention area during two participation events.

Figure x. Residents working on the design of the flood control area during on of the participation events.
Source: Dienst Integraal Waterbeleid, Provincie Antwerpen

Case description

Residents in the municipality of Beerse regularly suffer from **flooding**, often due to **heavy rainfall events** causing the Laakbeek (part of the Scheldt River basin) to overflow. The Laakbeek is characterised by a **pluvial regime** with large differences in the flow rate. Based on hydrological and hydraulic simulations, the Province of Antwerp decided to establish a **flood retention area** designed as a **nature-based solution** along the Laakbeek, to reduce flood risks further downstream. The measure can be seen as a combination of **flood risk prevention** and **mitigation**.

The area is 1.57 ha in size and located in a depression. The province bought the land from private owners in 2017. The neighbourhood was involved in the design of the flood control area through **participation events**. The flood retention area was officially opened in November 2022.

Figure x. Focus area. Source: Dienst Integraal Waterbeleid, Provincie Antwerpen

Figure x. The area that will be transformed into a flood control area.
Source: Dienst Integraal Waterbeleid, Provincie Antwerpen

SOLARIS key issues: co-creation and tokenistic participation?

The project in Beerse was initiated by water managers from the Province of Antwerp. Water managers in Flanders are characterised by their **technical background** and **expertise**. The aim is often to reduce the physical risk of flooding through engineered solutions. Overall, there is a **lack of knowledge** on social vulnerability at higher levels of government, and more specifically within the domain of water management. As a result, the project initiators did not specifically consider the potential impacts of the project on socially vulnerable groups. Whilst **two participation events** were organised, residents were not included from the onset of the project. The province had already decided on the primary objectives for the flood retention area, and residents could only provide input in the **final design stages**. There were also **no efforts to engage with socially vulnerable groups** during the participation events. Residents were invited based on whether they lived within a specific perimeter the province drew around the area. Questions therefore remain around whose interests and needs may have been **overlooked**.
Often, local-level governments have more **contextualised knowledge** on the neighbourhood in which projects are being implemented. However, the Municipality of Beerse was not a full partner in this project.

Existing data

- Paauw & Crabbé, *SOLARIS Belgium Report*
- Report: Assessment report of the focus area
- Report: Residents' participation in the Laak Beerse flooding area
- Flyer: Design of the flood control area
- Paauw & Crabbé (2023). The Social Dimension of Nature-Based Solutions: The Potential of Co-Creation Processes for NBS to Reduce Social vulnerability to Floods.

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    - Case Description
    - SOLARIS key issues in the case
  - Main SOLARIS results at case study level
    - How and when are issues of equality and justice addressed in FRM?
    - What is the role of public participation?
    - Is there knowledge and capacity building on social inequalities?

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Case Study factsheet
Geraardsbergen:

Solidarity in climate change adaptation policies: towards more socio-spatial justice in the face of multiple risks

How and when are issues of equality and justice addressed in FRM?

Geraardsbergen and the surrounding area is highly vulnerable to flooding, with a high damage potential. Over the last decades, fluvial floods from the Dender river have caused flood damage on multiple occasions. Pluvial floods, which can cause mudslides and put pressure on the sewage system, occurred for example in 2016 and 2021.

All **collective flood protection**, such as dikes or flood retention areas, have been implemented in Geraardsbergen. However, **these have proven to be insufficient to reduce flood risks**. The Flemish Environment Agency therefore stimulates PLP. However, Geraardsbergen is also characterised by a diverse set of social profiles, with large differences in socioeconomic status. Especially the city center is socially vulnerable, but also highly vulnerable to floods.

A focus on PLP raises important questions around the capacity of people to implement the measures (e.g., sufficient financial means, mobility, health) and its consequences for building flood resilience for all. **FRM policy documents are technical and do not recognise differences** in the capacity of residents to implement their own flood risk reduction measures. There is little attention to the justice and equality concerns raised by PLP. These concerns were also not actively taken along by the Flemish Environment Agency, who initiated the project in Geraardsbergen. They do recognise that PLP has the potential to reinforce inequality and argue that there is an opportunity to take this into account in the follow-up process through financial support for those who need it.

What is the role of public participation?

An information meeting was organised for residents in Geraardsbergen, where they could receive information about the need for PLP and given the opportunity to receive personalised advice on the measures most suitable for their houses. **The project initiators recognise that it is more difficult to reach socially vulnerable communities.** However, no efforts were made by the Flemish Environment Agency or the municipality to ensure that socially vulnerable groups were present at the information meeting. Questions therefore remain around who did not attend the information meeting, and what the main reasons were.
In addition, the actual uptake of PLP measures also remains limited. The main reason for residents to decide against PLP implementation remains unclear, although a major factor is expected to be costs, flood risk awareness, and a sense of urgency.

"I think the information meeting in 2018 was a very good initiative in itself. Only one important aspect was missing, and that is the link with other policy domains such as poverty. [...] And I think these two policy domains should have been brought together. Now it is only the policy domain of water management, or technical matters, that focuses on the problem of flooding. [...] But to my knowledge, the domains of water management, poverty, and maybe also integration, have not worked together on PLP and that is a major flaw" (interview, 9-8-2022).

Figure x. Floods in Geraardsbergen. Source: https://www.demorgen.be/tech-wetenschap/overstromingen-vervuilden-tuinen-geraardsbergen-met-zware-metalen~b8178dbc/

Figure x. Example of property-level protection. Source: www.climatejust.org

"Now, especially with those energy prices skyrocketing, if people are expected to invest in protecting their homes from flooding, I don't think there will be many who can afford that. If they have to choose between buying food and paying rent or protecting their homes from potential future flooding, they will choose food" (interview, 2-9-2022.

Is there knowledge and capacity building on social inequalities?

The **Flemish Environment Agency did not actively consider differences in vulnerability or the capacity of people to take up PLP in Geraardsbergen**. This could be explained by their technical approach, as well as the fact that the Flemish Environment Agency is a regional organisation that works at the Flemish level. Experts are further removed from local issues. The link with other policy domains, such as poverty, housing, or integration was not made in the development of this project.

National and regional-level socioeconomic and demographic statistics are available for the area, but these **remain insufficient to fully understand local needs and problems**. The municipal government and town councils are likely to have a better feeling of local issues and resident needs and may be better equipped to consider differences in the capacity of people to deal with floods. **However, the Municipality of Geraardsbergen was not a full partner** in the development this project. Increased collaboration between policy domains in FRM, as well as with lower levels of government, could increase the availability of information on how to consider justice and equality concerns in PLP.

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PG in practice

2 main sections:

- **Section 2/Main results of the cross-country comparison**
  - **5 sub-sections :**
    - **Degrees of justice in climate change** adaptation policies and flood risk management
    - **Technocratic vs. holistic perspectives** on risk and inequalities
    - Power (im)balances, **participation and recognition**
    - Justice issues relating to the **allocation of investment to manage flooding**
    - **Distribution of responsibility between public and private actors** in flood risk management and its implications for social justice

- Synthesis of the comparative results **(2 pages per sub-section)**
- Attention given to final **take-home messages and inspiring examples for practitioners**
- **Final check-list (*still to be refined and adjusted*)**

PG in practice

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Section 3.
participation and recognition

Solidarity in climate change adaptation policies: Towards more socio-spatial justice in the face of multiple risks

Who is involved? what capacities of participation processes to involve all target groups and consider inequalities among them?

Empirical work identified **a diversification of participants** in most participation processes, which can be explained by the diversification of objectives among FRM projects. **Flood managers and local authorities aim at gathering a wider variety of interests and representatives.**
However, **the most vulnerable target groups** (mainly among local inhabitants) **are missing**. Little is done to facilitate more equity among target groups.

Social inequalities are more and more recognized by flood risk managers. This was clearly stated by interviewees :

"Perhaps we didn't realise that we were breaking the memory of people who had lived there for years, who saw themselves ending up there [...] it was a modest population, which had built up through mutual aid... A real neighbourhood life, a real social life" (Blois local authorities)

However, **there remain barriers to the design of proactive strategies towards the most vulnerable target groups** and **little recognition of the necessity for a more equitable involvement of all target groups**. In this context, collaboration between flood managers and "social policy" representatives could be a first step towards a better involvement of socially vulnerable populations, as well as the integration of more social studies/indicators in flood risk assessments.

Insights from SOLARIS case studies

In Beerse (Flanders), residents located further downstream from the flood retention area were not involved in the co-creation processes, and their socioeconomic and demographic characteristics remained underexplored. The project initiators did not actively seek to identify or include vulnerable groups in the participation procedures and their voices may not have been heard. As one of the water managers involved in the development of the project explained:

"We organised two participation evenings and provided an information flyer in the neighbourhoods surrounding the flood retention area. [...] That is where it stopped for us. We did not ask questions such as: Who are we forgetting here? Who are we not reaching at all? We tried to account for the elderly as a target group, but we did not get much of a response to that".

Take home messages

SOLARIS case studies revealed a **wide variety of methodological tools to initiate public participation**.. Policy makers do not always see the need for more "advanced" participation processes, but they acknowledge the challenge which remains to involve all stakeholders and among them the most vulnerable.
The integration of the flood risk issue in a broader perspective of climate change and its combination with other issues (such as biodiversity protection or local development) seems to facilitate more innovative processes.

Some key "take home" messages can be drawn from the empirical results of the SOLARIS case studies.
- ***What are the topics open to debate and discussion in those processes?***
Attention should be paid to keep also in the debate the more technical aspects of flood risk management, even though such issues might appear more difficult to address in open discussions.

- ***How to better integrate all target groups?***
The social dimension of FRM projects often remain limited. The extensive use of social indicators in preliminary studies, the design of proactive strategies towards the most vulnerable groups to better involve them in participation processes, and the involvement of "social policy" representatives in FRM policy making could all contribute to improve this situation.

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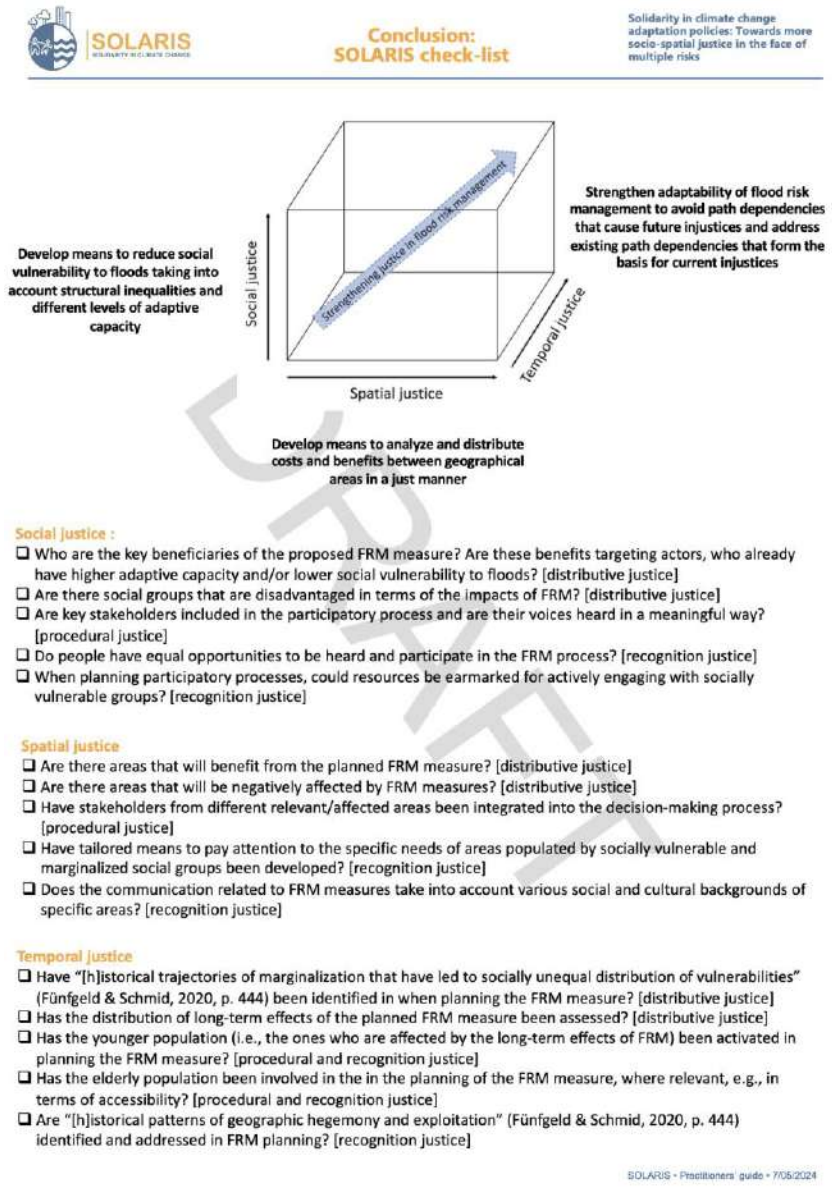

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Conclusion: SOLARIS check-list

Solidarity in climate change adaptation policies: Towards more socio-spatial justice in the face of multiple risks

Social justice :

- ❑ Who are the key beneficiaries of the proposed FRM measure? Are these benefits targeting actors, who already have higher adaptive capacity and/or lower social vulnerability to floods? [distributive justice]
- ❑ Are there social groups that are disadvantaged in terms of the impacts of FRM? [distributive justice]
- ❑ Are key stakeholders included in the participatory process and are their voices heard in a meaningful way? [procedural justice]
- ❑ Do people have equal opportunities to be heard and participate in the FRM process? [recognition justice]
- ❑ When planning participatory processes, could resources be earmarked for actively engaging with socially vulnerable groups? [recognition justice]

Spatial justice

- ❑ Are there areas that will benefit from the planned FRM measure? [distributive justice]
- ❑ Are there areas that will be negatively affected by FRM measures? [distributive justice]
- ❑ Have stakeholders from different relevant/affected areas been integrated into the decision-making process? [procedural justice]
- ❑ Have tailored means to pay attention to the specific needs of areas populated by socially vulnerable and marginalized social groups been developed? [recognition justice]
- ❑ Does the communication related to FRM measures take into account various social and cultural backgrounds of specific areas? [recognition justice]

Temporal justice

- ❑ Have "[h]istorical trajectories of marginalization that have led to socially unequal distribution of vulnerabilities" (Fünfgeld & Schmid, 2020, p. 444) been identified in when planning the FRM measure? [distributive justice]
- ❑ Has the distribution of long-term effects of the planned FRM measure been assessed? [distributive justice]
- ❑ Has the younger population (i.e., the ones who are affected by the long-term effects of FRM) been activated in planning the FRM measure? [procedural and recognition justice]
- ❑ Has the elderly population been involved in the in the planning of the FRM measure, where relevant, e.g., in terms of accessibility? [procedural and recognition justice]
- ❑ Are "[h]istorical patterns of geographic hegemony and exploitation" (Fünfgeld & Schmid, 2020, p. 444) identified and addressed in FRM planning? [recognition justice]

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PG in practice

September 2024/Available in two forms :

- Interactive and user-friendly PDF :
  - Thematic benchmarks
  - Table-of Contents (TOC) mechanism
- On the SOLARIS Website, with visually attractive layout **on the most relevant information** and **propositions** to help address CCAP and FRM issues (Executive Summary)

Partners

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SOLIDARITY IN CLIMATE CHANGE

SYKE

ACADEMY OF FINLAND

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Flood Hazard Research Centre

UKRI
UK Research and Innovation

University of Antwerp
CRESC | Centre for Research on Environmental and Social change

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