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SOLARIS Practitioners' guide

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► **To cite this version:**

Marie Fournier, Sofia Guevara, Jérôme Cardinal, Ann Crabbé, Mathilde Gralepois, et al.. SOLARIS
Practitioners' guide. 2024, 25 p. 10.17180/xzt8-7w36 . hal-04854147

HAL Id: hal-04854147

<https://hal.inrae.fr/hal-04854147v1>

Submitted on 3 Jan 2025

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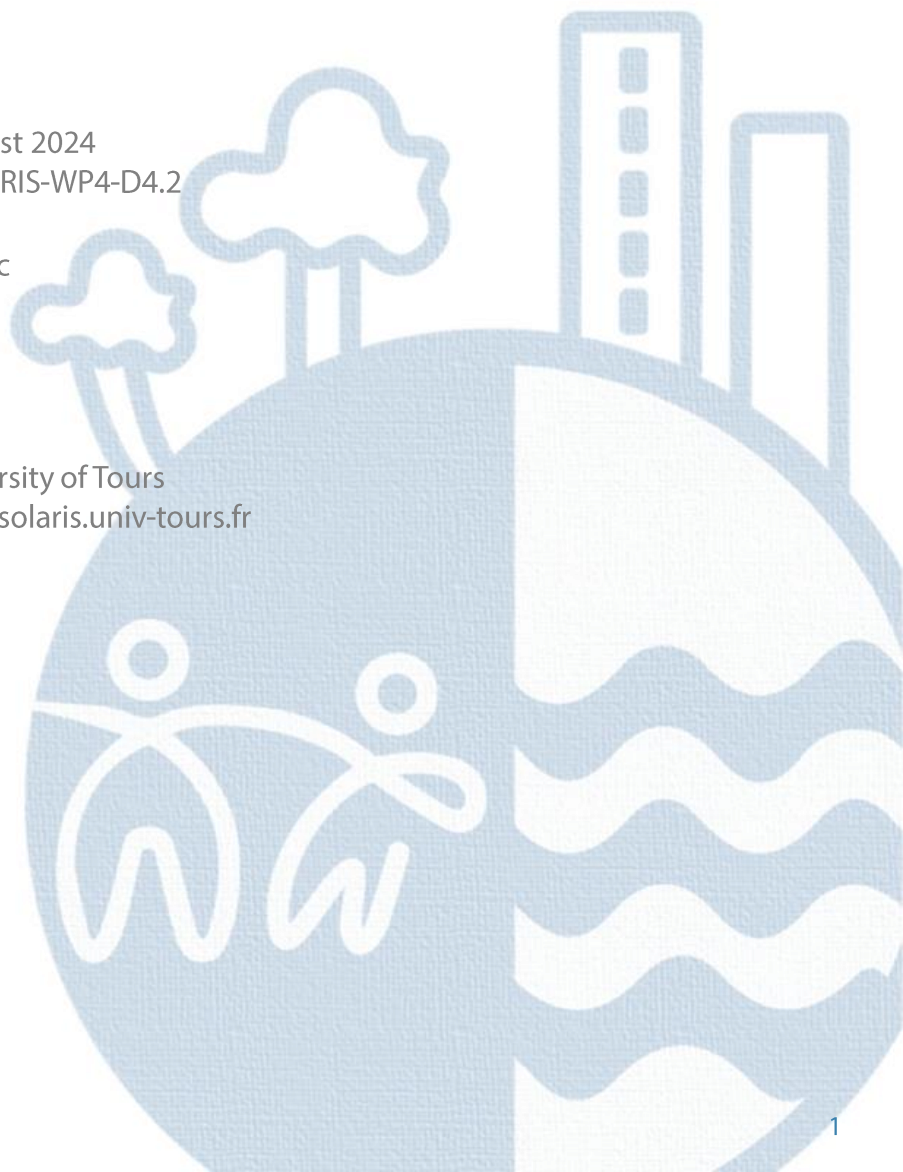
SOLARIS
SOLIDARITY IN CLIMATE CHANGE

**SOLIDARITY IN CLIMATE CHANGE ADAPTATION POLICIES:
TOWARDS MORE SOCIO-SPATIAL JUSTICE IN THE FACE OF
MULTIPLE RISKS**

Practitioners' guide

Date: August 2024
Report Number: SOLARIS-WP4-D4.2
Document
Dissemination level: Public

Coordinator: University of Tours
Project website: www.solaris.univ-tours.fr



Keywords

Flood risk management ; climate change adaptation ; socio-spatial justice ; public policy analysis ; practitioners' guide.

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Context

The SOLARIS Practitioners' Guide compiles the main results of the cross-country comparison work carried out during the SOLARIS project (SOLidarity in climate change Adaptation policies: towards more socio-spatial justice in the face of multiple RISks). It is specifically dedicated to practitioners in Flood Risk Management (FRM) and local decision makers. It aims at providing them, briefly, key points of attention during their practice, when defining and implementing FRM policies.

This report is part of the Work Package 4 (WP4) deliverable of SOLARIS, funded by the participant countries to the SOLSTICE program of JPI Climate "Connecting Climate Knowledge for Europe". More information about the SOLARIS project, its purpose and outputs can be found here <https://jpi-climate.eu/project/solaris/>.

Readers of the Practitioners' Guide will also be able to go easily into our examples, thanks to the various reports produced by the consortium: the *Handbook of Case study factsheets*, the *4 Country Reports*, as well as the *Comparative Report* which compiles all our references (see References Section and all weblinks).

SOLARIS at a glance

From 2020 to 2024, the SOLARIS project explored the question of justice in FRM across four countries: Belgium, England, Finland, and France. Three research questions have been answered for each participant country at both national and sub-national level (8 case studies):

1. How and when are issues of equality and justice identified and addressed in FRM? How does it link up with other policies, like CCAPs? Who benefits and who does not from decisions which are taken? This first research question refers to the concept of *Distributive Justice*, which focuses on the outcome of decisions and policies in FRM, the distribution of environmental benefits and burdens, as well as the distribution of costs.

2. How is participation in decision making for FRM facilitated? Are all relevant groups and individuals invited to participate? Does their participation make a difference to decision-making and outcomes? This second research question refers to the concept of *Procedural Justice* and focuses on the processes of decision making and policy making.

3. What is the role of (and access to) knowledge in FRM? How does this support capacity building for addressing social inequalities? This third research question refers to the concept of *Recognition Justice*, which intends to prevent certain socio-cultural groups from dominating political processes and ensure more equal distribution of costs and benefits in society. It addresses the recognition of all social groups and their needs.

Based on these research questions, a consistent case study approach was used with four main empirical tools (analysis of policy/guidance documents/grey literature, interviews with stakeholders, local discussion groups, and participant observation), so that the 4 national contexts and 8 case studies may be comparable.

What to find in this guide?

The developments provided in this Practitioners' Guide stem from the comparative phase carried out after empirical work (Work Package 3). Through the comparison of such different national contexts and cases, and based on our 3 research questions, 5 broad topics appeared to be the most crucial in our results and relevant for practitioners when questioning justice in FRM:

1. **Implementation of the concept of justice in climate change adaptation and FRM policies**
2. **Dominant technocratic perspectives on risk and inequalities in FRM**
3. **Power (im)balances, participation and recognition**
4. **Justice issues related to the allocation of investment to manage flooding**
5. **Distribution of responsibility between public and private actors in FRM and its implications for social justice**

Each section focuses on one topic and readers will find:

- Main issues for practitioners on this topic
- Insights from the SOLARIS project to illustrate these points of caution and learn from actual situations (using empirical evidence from our case studies)
- Additional advice to reflect on their current and future practices

At last, the concluding section provides complementary tools for practitioners. By developing a "Justice Box", combining spatial, social and temporal dimensions of justice, we offer several lists of questions that practitioners may address when defining and implementing policies.



Beerse



Geraardsbergen



Ault



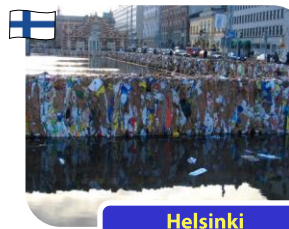
Blois



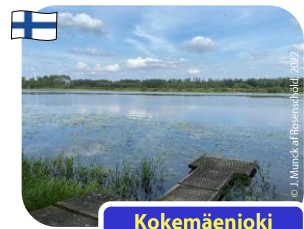
Lower Thames



West Sussex



Helsinki Metropolitan Area







Kokemäenjoki catchment area

Chapter 1

Implementation of the concept of justice in climate change adaptation and FRM policies

European institutions start to integrate issues of 'Justice' in climate and flood management policies. As such, the legal context is strengthened. Undoubtedly, the intentions are there. Nevertheless, if the reasons for this are different, the final effects are converging. The integration of justice in both climate adaptation and flood management policies is too slow and too weak.

The classic current definitions of the IPCC provide six concrete criteria for defining justice in terms of procedural, distributional and recognition justice. Our research question concerns the way in which justice should be integrated into the design and implementation of climate policies.

-  Under what conditions could climate and flood management policies community and advocacy groups align?
-  Which tools and expertise to concretely plan adaptation and flood management for the future: what data and type of expertise required, what funding capacities, what cost of implementation?
-  What regional policies to integrate local specificities (climate & governance), and to anticipate tensions between authorities ?
-  What responsibilities and eventually any negative side effects when justice is integrated into infrastructural projects and urban design processes?

ISSUE N°1



When dealing with the issue of justice in public policies, **procedural justice is crucial**. Policymakers should focus more on **how to engage community and advocacy groups** and how to create specific support for them.



Insights from SOLARIS

Most countries and regions in Europe have **integrated the notion of “public involvement”** in the construction of public policies since the 1980s. Participatory procedures are often mandatory. Nevertheless, they are **still lacking resources for engagement, skilled personnel, and sufficient time for a comprehensive approach**. The main conditions of participation are organised and regulated by public authorities. **In Flanders**, climate and flood policy instruments are elaborated from different policy domains even if the Environment Ministry still concentrates ‘legitimate’ knowledge. Citizens’ feedback remains rather limited. **In Finland**, mandatory requirements relate more to top-down information than consultation and coproduction to allow access to the proposals, opportunity to comment on the proposals in writing or via internet, etc.

ADVICE

It is often challenging to effectively engage the most vulnerable groups within local communities, thereby questioning the representativeness of participation. **In England**, even if the case of Flood Action Groups is a brilliant initiative, engagements in climate change adaptation and flood risk management policies also highlight the limits of capacity and capability to involve the “left behind” people.

Two difficulties should be solved. First, participatory processes should **reach the more marginalised groups**. Participatory processes are formal and narrowly focused. Second, the main strategies are focusing on phenomena through engineering perspectives, rather than proposing **solutions for the future of cities and neighbourhoods**.



ISSUE N°2



Without practical action, both strategies in climate change adaptation and flood risk management policies stay “too little, too slow”. Policy makers should question the **concrete capacity to plan adaptation and flood management: the data and the type of expertise required**, the funding capacity, the **cost of implementation** and the **resource capacities**.



Insights from SOLARIS

The prevalence of public authority knowledge leads to the **legitimacy of technical instruments based on statistical proofs, engineering skills, and infrastructural solutions**. Tools are characterised by top-down data, coming from a limited network of experts, focused on technical knowledge. For example, Adaptation policies **in Flanders** are prepared by the Flemish Taskforce for Adaptation, and the knowledge is as **much a compilation of existing data than a production of knowledge**.

In most countries, there is a big contradiction between, on one side, the **rich data on vulnerability** that exists at the national level on inequality, such as **in England** with the Indices of Multiple Deprivation, the Neighbourhood Flood Vulnerability Index or the Climate Just maps etc.; and on the other side, the **weak capacity to expand justice and implement equality considerations** more explicitly into climate adaptation and flood management implementation.

ADVICE

To encourage justice and equality, policy-makers could, as in **Finland**, consider that flood risk prevention through spatial planning is the main **responsibility of municipalities** and is strongly based on the municipal autonomy and **local self-governance**. Flood risk prevention should be **locally and democratically organised**, to contribute to procedural justice. **Recognition of differences in the capacity of groups to engage in participation processes** is crucial.



ISSUE N°3



There is a need for more research on **local specificities** both in climate adaptation and governance. It also calls for the study of **tensions between authorities**, sectorisation of priorities and consequences of evaluation.



Insights from SOLARIS

As in the entire history of European legal and institutional construction, the four SOLARIS countries have a political and institutional history rooted in a **culture of welfare and solidarity** since the Second World War, which makes it possible to look at how the consideration of justice is evolving. There is a strong public sector with a tradition of centralisation until the 1980s. Since then, there has been a trend of decentralisation, including climate and flood management. **France** has recently **devolved defence, mitigation, prevention** from national affairs to local authorities. Nevertheless, **national authorities keep a final capacity to drive a decision** on one strategy or another, essentially through funding capacity and the traditional legitimacy of expertise. **In Finland**, coastal and fluvial flood risk management is based on centralised government power and coordinated by the state authorities.

ADVICE

Decentralisation should mean more capacity for action. Implementation is still imposed mainly through regulatory instruments. Although there is a notable move towards local authorities, national governments must consider **transferring the final decision-making on policy content**, as well as **autonomous and full funding** to local government. Furthermore, cultural and socioeconomic differences between areas remain a real issue. Under this climate change context, European countries should maintain and reinforce their capacity to build large and redistributive welfare systems.



ISSUE N°4



Policy makers should question **how justice is integrated into infrastructural projects and urban design processes**; and how to balance between physical-infrastructural and socio-institutional approaches. This point of caution includes the **idea of maladaptation** and the subsequent responsibilities - or not - linked to any negative side effects.



Insights from SOLARIS

The countries have strengthened **the presence of spatial planning in flood management** since the 1990's, **as in France with the Flood Risk Prevention Plans (PPRI)** and then strengthened, such as **in England, with the Planning Policy Guidance**, the Planning Policy Statement, or the Making Space for Water Policy. Policies linking defence and prevention are **strengthened by mandatory requirements** such as the 'sequential test' in England or the Flemish 'water assessment'.

In two SOLARIS countries, there is a trend towards **increased individual responsibilities : England and Finland**. In Finland, planning is a strongly decentralised and a democratically organised process that underlines the importance of the self-governance of residents. In **England**, riparian owners carry significant responsibilities in flood risk management. In both cases, even with **far-reaching participation opportunities for residents**, the resources of different groups of citizens to participate are **not equally divided creating imbalanced political environments**.

ADVICE

Interactions between **climate adaptation, flood management and land planning** should be strengthened to challenge the top-down approach, as in France with the Action Program for Flood Prevention (PAPI) which increase the concrete **involvement of municipalities**. Technical expertise and engineering knowledge should not dominate climate and flood policies. If there are ongoing efforts to consider social vulnerability, to include lay and contextual knowledge, the social component is only operationalised through economic impact and based on compensation, which does not allow us **to build a common future for the regions at risk of flooding in a context of severe climate change**.



Chapter 2

Dominant technocratic perspectives on risk and inequalities in FRM

In all SOLARIS countries there is a strong emphasis on technical knowledge in FRM. Even in the case of England where data on risk considers aspects of social vulnerability, technical definitions of risk continue to dominate risk management policymaking. This section answers to the following questions:

- ➔ Why is it important to consider perspectives on risk other than technocratic?
- ➔ Why is it important to link the notion of vulnerability to clearer social indicators?
- ➔ What are the practical challenges to implement a holistic approach on risk management?
- ➔ What precautions should be taken in participatory processes?

ISSUE N°5



Basing public planning actions solely on a technical approach to risk can lead to bias in participatory processes (See also Chap. 3).



Insights from SOLARIS

For several years, **the issue of La Bouillie spillway in Blois (FR) was framed exclusively by the technical question of risk management**, excluding from the discussion the social situation of the inhabitants, and the impact that de-urbanisation would have on their paths. **In 2003, practitioners (state, municipality, and intermunicipal actors) undertook a delocation and de-urbanisation project in the spillway.** Based on a study carried out a few years earlier, **the state services and the intermunicipal actor Agglopolys had enough social data to understand who lived in this area and what their relationship was with the territory. But this data was not considered** when the delocation project was made public. **The practitioners only (re)discovered it two years later, after a large mobilisation of the inhabitants.**

"...we certainly underestimated the social aspect, compared to a very emblematic operation which was carried out at the same time" (Interview, State services representative, 14/04/2022)

ADVICE

Practitioners may consider taking steps to reduce this technocratic approach bias to improve recognition and equity in FRM. The central role of technical knowledge widens the gap between policymakers and residents. It may limit the possibility of mobilising a holistic approach to vulnerability that recognises different situations, compromising the implementation of any project.



ISSUE N°6



Often there are no clear indicators for addressing social equity issues in FRM, which can limit the effectiveness of a particular intervention. Where such indicators exist, they are not used. The notion of vulnerability in FRM often refers only to exposure (location) and the characteristics of the building to withstand an event.



Insights from SOLARIS

In Geraardsbergen (BE), property level protection measures are supported by means of subsidies, to deal with the residual risk that cannot be reduced by collective flood protection measures. However, the tools provided to implement these property level protection measures depend on the individual resources to finance them. **Without indicators that clearly address the issue of social equity, practitioners did not consider the socio-economic income of residents.** Whether or not the latter have the means to implement these measures remains an unknown.

In England, the Neighbourhood Flood Vulnerability index proves that social vulnerability is recognised. **However, the availability of knowledge does not mean using it.** In West Sussex, one FRM measure aims to support actions of landowners to maintain natural watercourses on their properties. **But practitioners are not using the index to explore whether residents have access to information on how to implement FRM solutions, or whether they have the material and social resources to do so.**

ADVICE

Practitioners may consider developing individual and comprehensive approaches with clearer social indicators that take into account individual and local specificities. Where data is available, practitioners may consider verifying its relevance. The diversity of the social status of the inhabitants might not really being considered in the implementation of a policy, which can prevent its effectiveness.



ISSUE N°7



Local authorities have difficulty in working with lay knowledge because they lack resources and because of some preconceptions. **Practitioners often assume that lay knowledge is naive because it does not always agree with the proposed solutions.** They also believe that lay knowledge should be more homogeneous. The plurality of viewpoints prevents practitioners from using it as a resource.



Insights from SOLARIS

In Ault, a relocation project has been contested by residents since 2013. Several practitioners emphasised that the challenge to the project was led by residents who did not want their individual situation to change.

“That's not what they wanted to hear, because the only thing they were interested in was repairing the cliff.” (Interview, Intermunicipal local planning practitioner 08/11/2023)

Fieldwork shows that this statement, though not completely wrong, could also be completed. The residents clearly demanded a democratic debate to decide collectively what to do about it. Inhabitants denounced the top-down approach of a relocation project that had been promoted among professionals but not with the residents.

ADVICE

Practitioners may consider allocating (human) resources to work with lay knowledge and consider it as a resource in policy implementation.

In most cases, local authorities have only a small number of agents to implement policies, while working with lay knowledge can be very time-consuming. Contrary to scientific and expert knowledge presented in classical supports such as reports or oral presentations, working with lay knowledge means to actively look for it and gather it. Though working with lay knowledge might be time consuming, it enhances the legitimacy of the measure at hand.



ISSUE N°8



The existing participatory mechanisms are insufficient to collect all the alternative voices concerned by the implemented measures. In civil society, power relations between organisations can also be a challenge. Not all citizens are equally able to speak and be heard in participatory spaces.



Insights from SOLARIS

*In England, the National Flood Forum provides support to enhance local capacities in flood risk management through the promotion and guidance of Flood Action Groups. Now, **the capacity of these groups to make change in policy making depends also on the resources of the inhabitants involved within the action groups.***

*In Finland, during the SOLARIS project, an art experimentation was used to facilitate the exchange with inhabitants. **The use of art is attractive; it arises curiosity and is also original.** However, it also raises challenges. In particular, during this experience, the challenge was related to the difficulties in language used from the artist (English) and inhabitants (Finnish).*

ADVICE

Practitioners may consider diversifying the format of participatory spaces to collect and work with lay knowledge. Each experience should also be subject to a reflexive evaluation for improvement.



Chapter 3

Power (im)balances, participation and recognition

In most (if not all) SOLARIS case studies, procedural justice was addressed in policymaking. A wide variety of tools implemented by flood risk managers to initiate public participation has been identified. From very mandatory tools (such as public inquiries or public hearings) to more innovative methods, attention is given to public participation by institutional stakeholders. Flood risk managers do not always see the need for “advanced” participation processes, but they acknowledge the challenges to involve all stakeholders and among them the most vulnerable. However, some questions remain:

- ➡ What are the topics open to debate and discussion in those processes?
- ➡ How to better integrate all target groups in such participation processes?

ISSUE N°9



Most participation processes are based on “boundary conditions”. They leave aside the very technical dimensions of flood risk management and rather focus on the other aspects of the projects. Hydraulic and hydrological objectives remain in the hands of water and flood managers. **This strategy tends to limit conflictual situations, but it undermines debates concerning the flood issue itself and discussions about potential socio-spatial inequalities in face of the flood risk.**



Insights from SOLARIS

In La Bouillie (Blois, FR), the definition of new flood management strategies was left out of the participation processes implemented in 2020 and 2021. Flood risk regulations, settled by the central government administration, framed the technical possibilities for the project. Then, several flood management technical strategies were identified as scenarios provided by a consultancy firm (working for the central state services) and were introduced as such, non-negotiable, during the workshops. These scenarios had been designed with different professional, associative or institutional local stakeholders, before public participation processes were implemented.

In Beerse (Flanders, BE), residents located 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 socially vulnerable groups in the participation procedures and their voices may not have been heard.

In SOLARIS, several case studies show that participation processes often do not open up the debate about the very technical dimensions of flood risk management. Protection levels or water capacities of future infrastructures are not debated, rather aspects of the projects more generally. This evolution is very noticeable as flood management is more and more integrated into broader nature-based solutions or blue-green infrastructures, but it leaves aside hydraulic and hydrological objectives of the projects, which remain in the hands of water and flood managers.

ADVICE

- ➔ **Practitioners may consider the integration of the flood issue in broader planning strategies** (such as adaptation to climate change, biodiversity protection and so on...), which facilitates the implementation of more proactive participation processes. **Targets groups are often more diverse and represent complementary issues.**
- ➔ **Participation processes may be implemented at a wider spatial scale and, as such, facilitate the enlargement of all interests.**
- ➔ **Practitioners should keep also in the debate the technical aspects of flood risk management,** even though such issues might appear more difficult to address in open discussions.



ISSUE N°10



Identify vulnerability among the target groups still proves difficult to answer in many situations. Better addressing the social dimension of FRM projects appears as a key issue.



Insights from SOLARIS

In La Bouillie (France), inhabitants denounced the fact that the most vulnerable target groups (mainly local inhabitants) were missing in the debates. Little was done to facilitate more equity in participation processes among target groups.

“All these people from the Bouillie, obviously, they weren't the cream of the crop, but they were good, honest people. They had worked all the time, small jobs, and then at the end of the day, they were thrown out, like dogs” (Interview, Former inhabitant, 26/01/2022)

*In Finland, both regional authorities and municipalities are required to involve stakeholders in FRM. However, the use of participatory tools or their outputs seems not widely known or understood. From SOLARIS case studies, it appears that **inhabitants and locals are willing to participate and are well informed about the possible benefits and trade-offs of different FRM solutions. However, not all stakeholders may have the same opportunity to influence FRM because they may lack resources or knowledge to participate.** Communication between the different stakeholders along the river seems to be lacking, as participation processes mainly involve organisations, such as municipalities, and not residents.*

ADVICE

The extensive use of social indicators in preliminary studies, the design of proactive strategies towards the vulnerable groups to better involve them in participation processes, and the involvement of “social policy” representatives in FRM policy making could contribute to improve this situation.



ISSUE N°11



Protest and resistance may be considered as relevant and functional forms of participation ; giving room to conflicts may be a more productive way of dealing with them, more than trying to enforce consensus.



Insights from SOLARIS

In Ault (France), the strong opposition led by the NGO “Ault Environnement” brought to light the inconsistency of relocation perimeters and the lack of consideration of individual situations. The NGO “Ault Environnement” also provided alternative proposals to the relocation project (partly based on grey-green solutions). Consequently, this conflict progressively evolved from a frontal opposition and unresolvable conflict to a more common construction.

ADVICE

Protest and resistance should also be considered as relevant and functional forms of participation. Giving room to conflicts may be a more productive way of dealing with them, more than trying to enforce consensus through participation processes that are not acknowledged by all contending parties.



Chapter 4

Justice issues related to the allocation of investment to manage flooding

Investment in flood risk management and the value of assets are intrinsically linked. Access to the benefits of FRM has been argued also said to be “inherently unfair”. The (un)fairness of FRM is principally a question of who benefits from the measures and who pays for them. At the same time, flood risk management interventions have the potential to re-distribute value, wealth (and to some extent) power both positively (i.e. those recognised as being more deprived offered more in compensation) and negatively (i.e. some suffering losses in asset value). This section answers to the following questions:

- ➡ Why is it important to consider the different spatial and temporal mismatches when considering investments in flood risk management?
- ➡ Why is it important to question the equity issues behind CBA mechanisms?

ISSUE N°12



There is often a disconnect between those benefiting from flood risk management and flood risk management investment (spatially but also both intra and intergenerational solidarity). – whilst this is often a consequence of many different types of public investment, it is almost always absent from flood risk policy.



Insights from SOLARIS

Spatial mismatch

The Beerse case (BE) provides an example of inter-spatial transfers of risks and benefits. The flood retention area in Beerse provides benefits for properties downstream where flood risks are more significant; however, it has required the acquisition of land from private individuals upstream. **While this has reduced the risk for some, it raises the question of fairness: are those benefiting from reduced risk contributing to the costs?**

“it is not something we actively considered. [...] We did not pay any attention to it, and that is something we might still need to learn. Not only at the municipal level, but also at the level of the Flemish government” (Interview, Local authorities, 02/03/2022).

The project was funded from public funds mostly from the Province of Antwerp, with a quarter from the Municipality and therefore those benefiting from reduced risk, whilst contributing through taxation, have not directly contributed to this increased protection. Private landowners, although unhappy about the compensation at the beginning and that they would lose out financially to solve flood risk problems for others, did have the power to develop a legal challenge and seemingly secure satisfactory terms to sell their land. The financial loss to landowners therefore may have been limited.

Temporal mismatch

In La Bouillie (France), the de-urbanised area is to be transformed into a new natural urban agricultural park providing environmental amenities for local residents. As 90% of the de-urbanisation project has been financed at national level by the Fund for the Prevention of Major Natural Hazards, it seems appropriate that this area should benefit as many people as possible. **However, on the one hand, many of those displaced by this process (many of them socially disadvantaged, who may have lived in the area for many years and had strong roots in the area) now live some distance from the newly planned facilities.** The cost of relocation to an equivalent property, nearby their original one, was prohibitive due to the high property prices in the area. On the other hand, **residents living on the periphery of this new area were arguably less financially affected by the changes** (their properties were not purchased and they did not have to move). It is these residents who will benefit most from the project, as they will have direct access to the new park (and the new centrality it has created). This may also have a positive impact on the value of their properties in the future.

ADVICE

Justice concerns in flood risk management should not only be limited to risk reduction but consider wider notions of value, wealth, and power. Not only do we better need to consider and reflect the fairness of asset investment both spatially and temporally, but also consider are we creating communities or social groups who are being left behind? Not only in terms of their risk reduction, but also in the secondary or tertiary benefits that investment may bring.



ISSUE N°13



Many of the CBA approaches in the countries (e.g. Finland, France, Flanders) had policies and guidance which focused almost exclusively on protecting the largest number/highest value of assets at the lowest cost. **The focus on CBA may be exacerbating inequalities as it will allocate investment towards higher asset areas which are likely to have a higher presence of expensive assets and associated wealthy people.**



Insights from SOLARIS

England has for some time a modified-CBA approach. For instance, the English Partnership Funding approach requires projects to be funded by both national (i.e. government) as well as local (e.g. local authority, business, homeowner, developers) partners. **However, the balance in finances which must come from national versus local sources is modified dependent on the vulnerability (as defined by socio-economic deprivation) of local communities.** Within any FRM project households will be allocated to one of three deprivation categories (20% most deprived communities, 21% to 40% most deprived communities and 60% least deprived communities using the Index of Multiple Deprivation) and a scaling payment tariff used (e.g. properties in the most deprived band will be scaled 2.25 times those in the least deprived band), thereby allocating schemes which benefit deprived households more funding. However, the requirement of local partners to provide any funding has been questioned as these areas are more likely to have lower budgets, they are more likely to have many other challenges demanding attention (e.g. housing, healthcare) and are those less able to mobilise additional funds (e.g. through local levy).

Is there an alternative to CBA? Property-level protection (PLP) measures, also known as Property Flood Resilience (PFR), which provide the most local approach to managing flooding, were present in several cases (e.g. Geraardsbergen, Belgium; Thames and West Sussex, England). Investment in these cases was often funded by the individual homeowner according to market principles (e.g. elitist/libertarian). **But these mechanisms also raise questions of equity: do the landowners have the means to finance the measures?** Although not present within the SOLARIS case studies (it will be implemented in the River Thames Scheme – although the scale is yet unknown), the Environment Agency has funded property-level resilience as standard measures. This, combined with Defra's Flood Recovery Grants of up to £5,000 available after some exceptional events and Flood Re's BuildBackBetter scheme offering up to £10,000 for flooded properties, has widened the potential for PLP, particularly to support its uptake by homeowners who would never have been able to afford properties. The use of different funding and allocation mechanisms (e.g. post-event recovery, insurance) has also widened the pool of available resources. However, there are still often either upfront costs that people can't afford or tenants can't make structural changes to their property. Tenants may also be ineligible for funding.

ADVICE

Recognising the truly critical points of decision and their impacts on justice within investment mechanisms would go some way to revealing potential injustices. The next step would be how to mitigate these or look to restorative justice mechanisms (i.e. how to redress any significant negative impacts).



Chapter 5



Distribution of responsibility between public and private actors in FRM and its implications for social justice

Flood risk management is no longer an exclusive responsibility of governments.

Since the 2010s, the countries studied in SOLARIS are evolving from a primarily flood defence approach towards flood risk management. In flood management a risk-based approach is used, emphasising the need to address both the probability and the consequences of flood and stressing the importance of collaboration between spatial planners, water managers, emergency and recovery actors.

The broadening of the actors considered responsible in FRM does not only entail involving multiple policy sectors, but also multiple types of actors like governments, (insurance) businesses, knowledge actors, individuals etc., pushing flood risk management (with competent governments) towards flood risk governance.

Across Europe, citizens are also increasingly expected to participate in the implementation of FRM. However, social reality brings about that not all residents have the same capacities and capabilities for self-reliance. This section addresses the following questions:

-  Managing flood risks: what consequences of shifting responsibilities?
-  What implications for social justice and recognition of social vulnerabilities?

Chapter 5

Distribution of responsibility between public and private actors

ISSUE N°14



We see an evolution towards ‘**smaller governments**’ and a **belief in the potential of market players** to solve societal problems.



Insights from SOLARIS

Insurance companies have been attributed financial responsibility in the recovery strategy and (increasingly) in the prevention strategy, even though practices differ.

Flood insurance in the UK is primarily provided by the private market and flooding has been a longstanding standard peril of both home buildings and contents insurance policies. Therefore, the responsibility for recovery resides with the homeowner to take out insurance cover for their assets, although for properties with mortgages, buildings insurance is required by the lender and so there is some incentivisation for cover. Flood is a standard peril within a composite insurance policy (along with other perils such as fire, theft, wind damages etc.) and as such there is cross-subsidisation via the grouping of perils. **Since 2016, the UK approach to flood insurance has moved closer to that of the CATNAT approach offered in France with the implementation of Flood Re. The aim of Flood Re is to maintain the availability and affordability of flood insurance. This operates as an industry-led pooling of insurance whereby insurance companies can cede the highest flood risks into the scheme which will pay the claims.** Flood Re also works to maintain the affordability of flooding, with the insurance premium for the flood component of the insurance being capped for homeowners. Since its inception, Flood Re has “backed insurance for more than 526,000 households”, many of which may not have been able to access or afford insurance if it were not for the scheme.

ADVICE

Governance arrangements with both public and private actors are a reality but need careful consideration about who bears responsibility.



ISSUE N°15



In flood risk management, government agencies are confronted with budget cuts, which stimulate them to reduce their ambitions in FRM. **Individuals are (more and more) considered responsible to inform themselves about their risk and to take appropriate actions.**



Insights from SOLARIS

In Flanders, there has been a growing understanding that collective flood protection measures alone will likely be insufficient to fully prevent floods. The importance of flood risk prevention and preparedness are also increasingly recognised, accompanied by a focus on non-structural measures. This includes measures to be taken at the level of individual properties, to prevent water from entering buildings. The Flemish Environment Agency therefore increasingly stimulates the implementation of PFR measures. **To increase awareness and interests, the Flemish Environment Agency conducted a handful of pilot projects in various municipalities in 2015 and 2017. In these pilot projects, homeowners can sign up to receive individualised advice on the PFR measures that are most suitable for their homes. Technical experts then visited each of the households and provided tailor-made advice on the measures most suitable for their properties. However, these pilot projects have only been executed in a limited number of municipalities and are, at present, not available region-wide.**

ADVICE

Empowerment is crucial to support individuals in the process of shifting responsibilities. It could be improved by engaging all stakeholders earlier in the process and helping them to obtain more information.



ISSUE N°16



Not all residents have the same capacities and capabilities for self-reliance. Residents may have lower socio-economic status and socio-economic position being less likely to take preventive measures and less likely to be resilient after a flood event.



Insights from SOLARIS

The various experts involved in FRM all differ in their background, knowledge base, expertise, and approach to FRM. Experts in flood defence are mainly (hydraulic) engineers and hydrologists, although in England for instance the expert group has been diversified due to the introduction of new disciplines since the 1970s. Flood defence experts often aim to improve public safety through infrastructural flood protection, with a focus on economic efficiency and value for money (i.e., largest number of properties protected against the lowest possible cost). Flood risk is often seen as a technical problem, determined by the probability of a flood event and potential consequences, usually in terms of economic losses. **Although in England there are ongoing efforts to consider social vulnerability in determining risk, in the other countries this is mostly overlooked. Justice issues are often not seen as a FRM problem.**

ADVICE

There is the need for a better recognition of differences in social vulnerability by FRM policies. In practice few steps are taken to create more 'just' flood risk management. By using more social indicators early in FRM policies and integrating flood issue in broader planning strategies, recognition of differences may be improved. See earlier chapters, in particular chapters 2 and 3.



Conclusion

Measures to move toward socio-spatial-temporal justice in FRM

In the following section, we clarify through three key scales of justice a set of guiding questions addressing *Distributive Justice, Procedural Justice and Recognition Justice* that can be utilised to help structure, and consequently make more efficient, the inclusion of justice concerns into FRM decision-making:

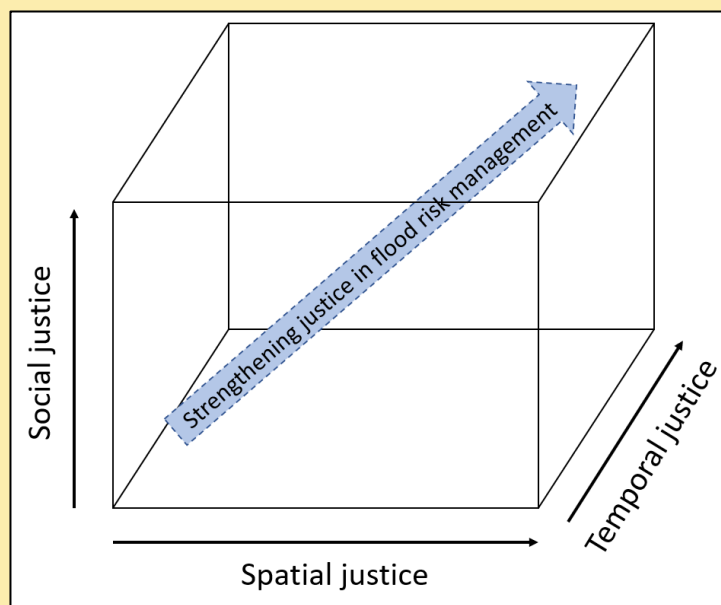


Figure 1. Strengthening the three scales of justice in flood risk management.

The list of questions is based on, and extends, the work of Kivimaa et al. (2023) on evaluation criteria for climate policy as well as de Goër de Herve's (2022) review of justice in the flood risk management literature. Our list is non-exhaustive, but sheds light on important aspects that can advance a more holistic approach for justice in FRM. We identify key issues that can help practitioners to better improve on justice in flood risk management from social, spatial and temporal scales.

1. Social justice

KEY OBJECTIVE

Develop the means to reduce social vulnerability to floods by taking into account structural inequalities and different levels of adaptive capacity.



Based on the results from the SOLARIS research as well as findings in the academic literature on FRM, it is crucial to continuously improve the integration of social justice into FRM. Flood risks as well as impacts of FRM measures are not justly distributed across socio-economic groups. The most socially vulnerable population lack the capacity and capabilities to participate in existing participatory processes and to take necessary actions to reduce their flood risks. In addition to these, the specific needs of socially vulnerable groups are rarely identified in FRM, which emphasises the demand for rethinking the existing ways in which justice is treated.

Questions supporting the development of socially just FRM:



- 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 all 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]

2. Spatial justice

KEY OBJECTIVE

Develop the means to analyse and distribute costs and benefits between geographical areas in a just manner.



As already noted, spatial justice is a key consideration for FRM, as floods, more often than not, connect localities, communities and cities along a watershed, for example, and the measures to tackle flood risks can affect a larger geographical area. Therefore, developing the means to both assess how justice is dispersed across space and how justice can be improved paying attention to interrelatedness of space is important. Another important point is how this spatial distribution of risks, costs and benefits is perceived and by whom.

Questions supporting the development of temporally just FRM:



- Are there areas that will benefit from the planned FRM measures?** [distributive justice]
- Are there areas that will be negatively affected by FRM measures?** [distributive justice]
- How is this spatial distribution of costs and benefits perceived** and by whom ? [distributive justice and procedural 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 marginalised 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]
-

3. Temporal justice

KEY OBJECTIVE

Strengthen the adaptability of flood risk management to avoid path dependencies that cause future injustices and address existing path dependencies that may form the basis for current injustices.



The temporal scale of justice needs to be strengthened to ensure that decision making in FRM considers effectively decisions taken in the past and path dependencies, which create injustices in the current and that current decision making does not create new or reinforce existing path dependencies. Understanding that FRM has a long legacy and that decisions taken today will affect the vulnerability of social groups and areas over a longer period of time will be of critical importance.

Questions supporting the development of temporally just FRM:



- Have long-term trends of marginalisation leading to socially unequal distribution of vulnerabilities been identified** 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 planning of the FRM measure, where relevant, e.g., in terms of accessibility? [procedural and recognition justice]
- Are patterns of domination identified and addressed in FRM planning?** [recognition justice]
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