CO-PRODUCTION AND THE KEY ASPECTS OF COMMUNITY INVOLVEMENT IN FLOOD RISK MANAGEMENT (FRM)

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INTRODUCTION

Flood risk management (FRM) has shifted towards more decentralised and people-centred approaches. This increase in community involvement has become conceptually linked with 'co-production,' used in other societal domains by both academics and professionals over the past decade. The two main principles of co-production are fair, equitable distribution of power and community empowerment. Mees et al.[1] have set out typologies of citizen co-production in one of the most relevant frameworks for understanding the forms of co-production within the domain of FRM. Yet some of the Mees et al.[2] categories arguably do not fully adhere or embrace the core principles of equitable power distribution and empowerment.

This paper discusses how the potential limitations in these categories could inadvertently reinforce power imbalances and restrain opportunity for community empowerment. Drawing on wider research, a scoping literature review (across bibliographic databases Scopus, Web of Science and Google Scholar), the paper argues that five key aspects of community involvement—mutual learning, early and long-term involvement, inclusivity, clear objectives, and capacity building—would enable adherence to the core principles of co-production in FRM. These key aspects integrated with the Mees' framework would enable the evaluation of not only the 'form' of co-production, but also if and how communities have been empowered in the process.

Shift in Governance – to FRM and Co-Production

Flood Risk Management (FRM) is understood as the strategies undertaken by government and non-governmental actors with the aim of averting and/or lessening the impact of flood damage[3]. Many researchers have reported a shift in governance from traditional 'flood defence', characterized by centralised top-down decision-making and structural hard engineered flood defences, to 'flood risk management' with the adoption of multiple, integrated and holistic measures. FRM includes hard engineering solutions, but also softer options such as nature-based solutions, property flood resilience measures, flood forecasting and warnings, which typically necessitate the involvement of multiple actors, stakeholders, and people-centred approaches[4].

This shift can be attributed to a number of factors, that have been identified in the literature. Climate change impacts, with the increasing frequency and intensity of flood risks, means that the physical

limitations of flood defences to fully protect against flood events have been recognised[5]. There are higher costs associated with defences, more recently compounded by government austerity[6]. International and national policy drives the shift, such as the UN's Sendai Framework for Disaster Risk Reduction (2015–2030), the EU's Flood's directive (2007/60/EC)[7], England (UK)'s 'Big Society' agenda[8] and 'Making Space for Water' strategy[9] and the 'Participation Society' and 'Room for the River' programme in the Netherlands[10].

With this shift, communities are expected to be more involved in FRM, and some researchers have evidenced increased community participation[11]. Communities are contributing their knowledge, ideas, time, resources, values within the entire FRM cycle (from risk prevention through to recovery from flooding)[12]. This increase in community involvement has become closely linked with the term 'co-production,' which has gained popularity, arguably becoming a 'buzzword' used by both academics and professionals over the past decade[13].

Rationale and challenges of co-production

Several researchers have also advocated for community co-production efforts in FRM. Some suggesting it has an intrinsic or inherent value[14], others suggesting that co-production provides a platform to share social concerns in the decision making and implementation stages of FRM alleviation projects[15]. It also highlighted that it enables integration of diverse local knowledge in FRM[16]. Co production has also been suggested to enhance development of social capital which also enhances community resilience to flooding[17].

Yet there are concerns about the time and resources required for effective collaboration efforts, which can be prohibitive[18]. At times, co-production is misused to legitimize already agreed decisions[19]. Co-production initiatives have also been reported to lead to 'environmental racism'[20]. These challenges around collaboration and co production initiatives in FRM highlight the need for an ongoing evaluation of co-production frameworks to further facilitate reflexive practice.

Principles of co-production

Beyond its buzzword status, co-production aims to represent a shift in how collaborative efforts are approached[21]. Elinor Ostrom is widely credited as the original instigator of the term 'co-production' in the 1970s[22]. Ostrom's research showed that aspects of public safety can improve when communities work together with police officers instead of just being passive recipients of public safety[23]. The concept gained traction through the following decades in various fields including healthcare, public administration, policy, planning and now more latterly within the FRM domain[24]. Therefore, as co-production evolved from its conceptual origins to practical application across various fields and policies, certain core principles emerged that define its essence. These principles reflect the lessons learned from decades of implementation and research, encapsulating the fundamental values and goals that drive co-productive approaches. While the specific articulation of these principles may vary depending on the context and discipline (for example, see McEwen[25]), two key principles or ideals consistently stand out as central to the concept of co-production.

Firstly; the goal for a fairly equitable distribution and sharing of power in decision making[26]. This principle emphasizes the importance of distribution of power, enabling all participants to actively shape decisions. It is suggested that understanding the mechanisms through which decisions are made can shed light on how power is shared within a given context[27].

Secondly, the goal for community empowerment, which may involve community members gaining skills and knowledge to actively participate and or lead as well in collaborations. Fostering these interactions and processes that lead to growth and development enables community to take more ownership of their initiatives[28]. Community empowerment could be seen as the one overarching core

principle of co-production with power sharing viewed as one of the ways to empower communities[29]. Twigger-Ross[30] do define community empowerment as 'rebalancing of power' between actors such as government and community.
These fundamental principles of co-production, while well-established in fields such as healthcare, hold significant implications for the analysis of co-production in FRM. By applying these principles, community involvement in FRM can transition towards a community-empowerment model approach to managing flood risks.

CO-PRODUCTION IN FLOOD RISK MANAGEMENT

A literature search using the keywords 'co-production' AND 'flood risk management' reveals Mees et al.[31] paper consistently appearing among the top five results in Web of Science, Scopus and Google Scholar when sorted by relevance. It stands out in offering a typology or framework for understanding co-production in the field of FRM. Therefore, this paper considers Mees' framework as one of the most relevant frameworks for understanding co-production within the domain of FRM.
Table 1 presents Mees' framework of co-production typologies. For a comprehensive explanation of each category, please refer to the full paper.

Typology	Categories
Type of interaction	• Hierarchical • Incentivised • Deliberative
Role and Type of citizen input	• Substitutive (Role) • Complementary (Role) • Co-funding/Co-investment (Type) • Co-delivery (Type) • Co-creation of knowledge (Type)
Distribution of contribution and benefits	• Private individual • Private collective • Philanthropic individual • Philanthropic collective

Table 1: Mees' framework for typologies of co-production in FRM

The typologies provide a useful and comprehensive framework for understanding the forms of co-production in FRM. However, it is important to evaluate how well these categories under these typologies potentially align and adhere to the core co-production principles.

Evaluating FRM Co-Production Categories for Adherence to Core Principles

Hierarchical co-production acknowledges the reality of government-mandated community involvement, but it also raises concerns about power imbalances. The current emphasis on FRM regulations and sanctions suggests a top-down approach where community members have limited agency and autonomy in decision-making, undermining the principle of fair and equitable power sharing. Additionally, the category may lack the element of voluntary participation, valuable in any collaboration initiative[32]. Therefore, the extent to which it truly embodies the co-production principles, as opposed to mere compliance, is debatable.
Incentivised co production, where the government incentivises citizen participation, can be viewed as a more collaborative approach than hierarchical co-production. However, it may still place the government in a more controlling position than the community by offering incentives for specific community or individual behaviours. While incentives can encourage participation and could support

community empowerment to an extent, they may not necessarily foster or allow for equitable decision-making. For example, the examples by Mees'[33] primarily involve subsidies or tax breaks for implementing property flood resilience. These examples suggest that while the community was encouraged to participate, the scope of their involvement might be limited to actions predetermined by the government, leaving little room for community-led decision-making or alternative solutions. Therefore, more detail is needed, such as which decisions community contributed to and how.

Similar arguments can be made for complementary co-production whereby in some cases, complementary co-production only allows the community to supplement government activities without having the power to influence decision-making. If the community's role is limited to supporting pre-decided government actions, without having a say in how those actions are planned or delivered, then we should question if this represents true community empowerment and whether the community has shared power in the process.

For substitutive co-production, community efforts replace government actions. This raises concerns about the shifting of costs to community and exploitation of community resources as well as the erosion of public services. If communities are taking on responsibilities that were previously the responsibility of the government, it could lead to an unfair burden on them, particularly for marginalized communities with limited social, human, cultural capacities[34]. This would undermine the empowering aspect of co-production and perpetuate existing inequalities. (Such cases have been reported [35]).

Private individual and collective co-production categories focus on private benefits accruing to individuals or specific groups within the community. While it can be empowering for those individuals/groups involved, an emphasis on only private gains could potentially create disparities between those who can contribute and those who cannot, leading to unequal benefits and detraction from the broader community-wide goals of FRM. If co-production efforts are primarily or solely driven by private interests, those with more resources may have more influence or better outcomes than others. This might lead to fragmented initiatives and also to neglect of marginalised vulnerable populations, hindering the goal of equitable outcomes and community-wide empowerment.

These examples highlight potential limitations in how the Mees' categories, as they stand, might inadvertently reinforce power imbalances, limit influence in decision making in the process restraining the opportunity for community empowerment. Mees et al.[36] have acknowledged these concerns for negative consequences. To address these concerns, this paper suggests an additional conceptual lens, supplementing the Mees' 'forms' of co-production typology to enable a more detailed analysis of 'how' the community are involved, and if they are truly empowered within FRM initiatives.

KEY ASPECTS OF COMMUNITY INVOLVEMENT

The following section identifies key aspects to foster meaningful and collaborative community involvement from the literature, in order to promote a more balanced distribution of power and enable community empowerment.

Mutual learning, benefits and two-way communication

To foster effective and collaborative community engagement, it is important to strive towards mutual learning, respect, and benefits for both community members and state actors[37]. Mutual learning and benefits align with the attribute of reciprocity, ensuring that both community participants and government actors gain value from their involvement[38]. This concept of reciprocity sets the foundation for building collaborative relationships[39] and sharing of power[40]. Collaboration is suggested to foster the development of shared knowledge and shared decision making[41].

This key aspect also recognizes the importance of the diverse knowledge and perspectives of community members and encourages a two-way exchange of information between them and the project

implementers[42]. Incorporating traditional local knowledge in the engagement process is one way to express community viewpoints, suggested to lead to a more comprehensive and effective decision-making process in FRM[43].
It is also important for communities to feel empowered to be able to voice their perspectives and influence decision-making processes[44]. This empowerment is fostered by this iterative two-way learning process and as the community also stands to benefit[45].

Early and long-term involvement of community members

Many researchers underscore the significance of sustained community engagement throughout the entire project or program lifecycle, from inception to completion[46]. This enables establishment of a sense of ownership and promotes sustainability of community involvement[47]. Early and consistent involvement of community members helps build effective relationships and trust[48], enabling them to contribute and also enhance the acceptability and legitimacy of engagement recommendations[49]. Involving the community in decision-making from the outset ensures that the knowledge generated is locally relevant and the project is sustainable in the long-term[50]. It is suggested that early and long-term involvement allows for relationship building and frequent interactions with relationship building viewed as key in the sharing power and community empowerment[51].

Inclusivity

Inclusivity is argued to be a key aspect of collaborative community engagement[52]. Inclusivity ensures that all members of the community are represented, have an equal opportunity to participate in the process and that this includes aspects of fairness. Inclusivity also ensures that the needs and aspirations of all members of the community are considered, particularly those who may be marginalized in society[53]. This includes groups of individuals from different backgrounds, such as different races, social economic backgrounds, faiths, sexual orientations, and abilities[54]. Different groups may require different types of engagement[55]. For example, methods that require reading or writing should be avoided when working with groups in communities that may include individuals who are illiterate[56]. It is important to be flexible and adjust the approach as needed to address new challenges that may arise, and the different approaches employed should equalise and share power between participants to avoid marginalizing the voices of less powerful members of the community. This leads to overall community empowerment without re-enforcing any existing inequalities within a community[57].

Clear goals, objectives, roles and responsibilities

Establishing clear objectives, roles, and responsibilities for stakeholders and participants in a community engagement process is proposed to be important to managing expectations, cultivating trust, and avoiding dissatisfaction[58]. By clarifying the expectations and responsibilities of all parties involved, stakeholders are better equipped to participate effectively[59]. This also ensures that the process is transparent[60]. Thoradeniya and Maheshwari[61] contend that transparency and accountability cultivate fairness and trust in the engagement process. Furthermore, clear communication can help to prevent misunderstandings and conflicts between stakeholders[62]. Having clear understanding of the objectives, the nature of involvement, the timeline, and the purpose of the engagement is also important for the success of community engagement[63], whereas unclear goals and responsibilities can lead to decreased involvement and undermine trust, leading to a failure of the engagement process. Trust building is associated with relationship building which sets the foundation for collaboration and community empowerment[64].

Capacity building

Reed[65] and Carr et al.[66] emphasize that merely providing opportunities for community involvement in decision-making and implementation is insufficient for effective participation. Therefore, community members should possess the actual capacity and skills to be involved meaningfully. This concept, referred to as competence by Carr et al.[67] can necessitate educating participants and fostering the knowledge and confidence required for their active involvement. The need for capacity building may also arise because some project implementers may undervalue or distrust experiential or indigenous local knowledge from communities[68]. Puzyreva et al.[69] also corroborates this, highlighting the need of knowledge attainment through trainings and suggest that capacity building enables collaborative community involvement. Puzyreva et al.[70] contends that capacity building enables community members to develop more knowledge and skills to allow them to effectively contribute to discussions with technical experts. The importance of capacity building has been emphasized by various other researchers[71]. Nguyen[72] contends that capacity building empowers communities to have more equitable power or more roles in decision making.

Although aware that these are not exhaustive, integrating these key aspects (Table 2) —mutual learning, early and sustained engagement, inclusivity, clear objectives, and capacity building— into a framework of co-production leads towards a more holistic understanding of co-production in FRM. These aspects can be used to analyse whether community involvement fosters empowerment and shared decision-making, considered as fundamental values for co-production.

Key Aspect	Values, actions and norms involved
Mutual learning and benefits	• Two-way dialogue • Reciprocity • Use of local knowledge
Early and long-term involvement	• Relationship building • Creation of community ownership • Sustainability structures
Inclusivity	• Fairness • Accessibility • Emphasis on marginalised groups of society
Clear goals, responsibilities, objectives	• Clear tasks • Transparency • Accountability
Capacity building	• Trainings • Sensitization efforts • Awareness raising

Table 2: Key Aspects of community involvement

CONCLUSION

The shift in FRM towards more decentralised and people centred approaches has led to the popularity of co-production as a concept[73]. The two main principles of co-production are fair and equitable distribution of power[74] and community empowerment[75]. This paper has introduced five key aspects of community involvement that can lead towards the adherence of these core principles. Mees[76]

comprehensive co-production framework is important to analyse and evaluate the form of community involvement in FRM. However, this paper argues that some categories within the framework arguably do not fully adhere to these core principles of co-production. An integrated framework, of Mees co-production typologies and this paper's key aspects, is proposed to evaluate the forms of how communities are involved in FRM, but also if and how they have been empowered in the process. This is crucial for any co-production efforts by government and other authorities.

Incorporating this extra layer of understanding community involvement in contentious contexts such as FRM is likely to introduce further complexities in practice. However, these complexities are arguably worth navigating to ensure meaningful engagement and empowerment. This approach will be tested in the next stage of this PhD research, analysing FRM government-led projects with communities in England (UK) and Uganda.

Acknowledgement

This work is funded through the UK government's Flood and Coastal Resilience Innovation Programme, which is part of the government's National Flood and Coastal Erosion Risk Management Strategy for England. FCRIP is funded by DEFRA and managed by the Environment Agency

NOTES

[1] Hannelore Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance," *Environmental Science and Policy* 89, no. September (2018): 330–39, https://doi.org/10.1016/j.envsci.2018.08.011.
[2] Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance
[3] Hannelore Mees et al., "Shifting Public-Private Responsibilities in Flemish Flood Risk Management. Towards a Co-Evolutionary Approach," *Land Use Policy* 57 (2016): 23–33, https://doi.org/10.1016/j.landusepol.2016.05.012.
[4] Steven Ashley Forrest, Elen Maarja Trell, and Johan Woltjer, "Emerging Citizen Contributions, Roles and Interactions with Public Authorities in Dutch Pluvial Flood Risk Management," *International Journal of Water Resources Development* 37, no. 1 (2021): 1–23, https://doi.org/10.1080/07900627.2019.1701999; Lindsey McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management," in *Research Handbook on Flood Risk Management* (Edward Elgar Publishing, 2024), 323–41; Karen Potter, "Cementing 'Stakeholder Collaboration' into Flood Risk Management," in *Flood Handbook* (Taylor & Francis, 2022), 171–92, https://doi.org/https://doi.org/10.1201/9781003262640-9.
[5] A C Cashman, "Case Study of Institutional and Social Responses to Flooding: Reforming for Resilience?," *Journal of Flood Risk Management* 4, no. 1 (2011): 33–41, https://doi.org/10.1111/j.1753-318X.2010.01087.x; Alan Werritty, "Sustainable Flood Management: Oxymoron or New Paradigm?," *Area* 38, no. 1 (2006): 16–23, https://doi.org/10.1111/j.1475-4762.2006.00658.x.
[6] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management"; Potter, "Cementing 'Stakeholder Collaboration' into Flood Risk Management."
[7] Hannelore Mees et al., "Coproducing Flood Risk Management through Citizen Involvement: Insights from Cross-Country Comparison in Europe," *Ecology and Society* 21, no. 3 (2016), https://doi.org/10.5751/ES-08500-210307.
[8] Clare Twigger-Ross et al., "Community Resilience to Climate Change: An Evidence Review" (Joseph Rowntree Foundation, 2015), https://researchonline.ljmu.ac.uk/id/eprint/15793/7/Community resilience to climate change an evidence review.pdf.
[9] W. Neil Adger et al., "Sharing the Pain: Perceptions of Fairness Affect Private and Public Response to Hazards," *Annals of the American Association of Geographers* 106, no. 5 (2016): 1079–96, https://doi.org/10.1080/24694452.2016.1182005.
[10] Forrest, Trell, and Woltjer, "Emerging Citizen Contributions, Roles and Interactions with Public Authorities in Dutch Pluvial Flood Risk Management."; Edelenbos et al., "Stakeholder initiatives in flood risk management: exploring the role and impact of bottom-up initiatives in three 'Room for the River' projects in the Netherlands."
[11] Paula Orr et al., "'Pieces of Kit' Are Not Enough: The Role of Infrastructure in Community Resilience," in *E3S Web of Conferences*, vol. 7, 2016, https://doi.org/10.1051/e3sconf/20160708009; Sebastian Seebauer et al., "Bottom-up Citizen Initiatives as Emergent Actors in Flood Risk Management: Mapping Roles, Relations and Limitations," *Journal of Flood Risk Management* 12, no. 3 (2019): 1–17, https://doi.org/10.1111/jfr3.12468.
[12] Robert Šakić Trogrlić et al., "Characterising Local Knowledge across the Flood Risk Management Cycle: A Case Study of Southern Malawi," *Sustainability (Switzerland)* 11, no. 6 (2019), https://doi.org/10.3390/su11061681; Philipp Babcicky and Sebastian Seebauer, "The Two Faces of Social Capital in Private Flood Mitigation: Opposing Effects on Risk Perception, Self-Efficacy and Coping Capacity," *Journal of Risk Research* 20, no. 8 (2017): 1017–37, https://doi.org/10.1080/13669877.2016.1147489.
[13] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience"
[14] McEwen. "Co-Production and the Role of Lay Knowledge in Community Resilience"
[15] Sarah L Fitton and Alice M Moncaster, "Arguments for a Co-Production Approach to Community Flood Protection," *Proceedings of the Institution of Civil Engineers-Engineering Sustainability* 172, no. 7 (2019): 335–44, https://doi.org/https://doi.org/10.1680/jensu.17.00014.
[16] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience"
[17] Twigger-Ross et al., "Community Resilience to Climate Change: An Evidence Review"; Hannelore Mees, Ann Crabbé, and Peter P.J. Driessen, "Conditions for Citizen Co-Production in a Resilient, Efficient and Legitimate Flood Risk Governance Arrangement. A Tentative Framework," *Journal of Environmental Policy and Planning* 19, no. 6 (2017): 827–42, https://doi.org/10.1080/1523908X.2017.1299623.
[18] Potter, "Cementing 'Stakeholder Collaboration' into Flood Risk Management."
[19] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience"
[20] Thomas Thaler and Sally Priest, "Partnership Funding in Flood Risk Management: New Localism Debate and Policy in England," *Area* 46, no. 4 (2014): 418–25, https://doi.org/10.1111/area.12135.
[21] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience"
[22] Melanie Zurba et al., "Learning from Knowledge Co-Production Research and Practice in the Twenty-First Century: Global Lessons and What They Mean for Collaborative Research in Nunatsiavut," *Sustainability Science* 17, no. 2 (2022): 449–67, https://doi.org/10.1007/s11625-021-00996-x; T. Bovaird et al., "Activating Citizens to Participate in Collective Co-Production of Public Services," *Journal of Social Policy* 44, no. 1 (2015): 1–23, https://doi.org/10.1017/S0047279414000567; Tram Nguyen et al., "How Does Integrated Knowledge Translation (IKT) Compare to Other Collaborative Research Approaches to Generating and Translating Knowledge? Learning from Experts in the Field," *Health Research Policy and Systems* 18, no. 1 (2020): 1–20, https://doi.org/10.1186/s12961-020-0539-6.

[23] Elinor Ostrom et al., *Community Organization and the Provision of Police Services*, vol. 1 (Sage Publ., 1973); Elinor Ostrom et al., "The Public Service Production Process: A Framework for Analyzing Police Services.," *Policy Studies Journal* 7 (1978).
[24] Nguyen et al., "How Does Integrated Knowledge Translation (IKT) Compare to Other Collaborative Research Approaches to Generating and Translating Knowledge? Learning from Experts in the Field"; McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management"; Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance."
[25] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience"
[26] OECD, "Stakeholder Engagement and the Water Agenda," in *Stakeholder Engagement for Inclusive Water Governance* (Paris: OECD Publishing, 2015), 29–52, https://doi.org/10.1787/9789264231122; Daniel Masterson et al., "Mapping Definitions of Co-Production and Co-Design in Health and Social Care: A Systematic Scoping Review Providing Lessons for the Future," *Health Expectations* 25, no. 3 (2022): 902–13, https://doi.org/10.1111/hex.13470; Suzanne Spicer, "Researcher's Guide to Engagement. The 'Afterlife of Heritage Research' Training Programme." (University of Manchester, 2013), https://documents.manchester.ac.uk/display.aspx?DocID=28845#:~:text=The Public Engagement Onion,-making to information-giving.; C. E. Jakobsson et al., "Co-Producing Research on Psychosis: A Scoping Review on Barriers, Facilitators and Outcomes," *International Journal of Mental Health Systems* 17, no. 1 (2023): 1–25, https://doi.org/10.1186/s13033-023-00594-7; Michelle Farr et al., "Co-Producing Knowledge in Health and Social Care Research: Reflections on the Challenges and Ways to Enable More Equal Relationships," *Humanities and Social Sciences Communications* 8, no. 1 (2021): 1–7, https://doi.org/10.1057/s41599-021-00782-1; Nguyen et al., "How Does Integrated Knowledge Translation (IKT) Compare to Other Collaborative Research Approaches to Generating and Translating Knowledge? Learning from Experts in the Field"; McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management."
[27] Farr et al., "Co-Producing Knowledge in Health and Social Care Research: Reflections on the Challenges and Ways to Enable More Equal Relationships."
[28] Alexandra Albert et al., "Citizen Social Science: New and Established Approaches to Participation in Social Research," in *Vohland K. et Al.(Eds). 2021. The Science of Citizen Science*, ed. Vohland Katrin et al. (Switzerland: Springer, 2021), 119–38, https://doi.org/https://doi.org/10.1007/978-3-030-58278-4; Daphne Vanleene, Joris Voets, and Bram Verschuere, "The Co-Production of a Community: Engaging Citizens in Derelict Neighbourhoods," *Voluntas* 29, no. 1 (2018): 201–21, https://doi.org/10.1007/s11266-017-9903-8; Zurba et al., "Learning from Knowledge Co-Production Research and Practice in the Twenty-First Century: Global Lessons and What They Mean for Collaborative Research in Nunatsiavut"; Jo Erwin et al., "Co-Production of Health and Social Science Research with Vulnerable Children and Young People: A Rapid Review," *Health Expectations* 27, no. 2 (2024), https://doi.org/10.1111/hex.13991; P. Wittels, T. Kay, and L. Mansfield, "Enabling Mothers of Young Children in a Low SES Area to Co-Design the Support They Are Seeking for the Adoption of Healthy Behaviours," *Perspectives in Public Health* XX, no. X (2023): 1–6, https://doi.org/10.1177/17579139231205488.
[29] Zurba et al., "Learning from Knowledge Co-Production Research and Practice in the Twenty-First Century: Global Lessons and What They Mean for Collaborative Research in Nunatsiavut."
[30] Twigger-Ross et al., "Community Resilience to Climate Change: An Evidence Review."
[31] Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance."
[32] D A DeCaro et al., "Understanding and Applying Principles of Social Cognition and Decision Making in Adaptive Environmental Governance," *ECOLOGY AND SOCIETY* 22, no. 1 (2017), https://doi.org/10.5751/ES-09154-220133; B Thoradeniya and B Maheshwari, "Engaging Stakeholders for Water Diplomacy: Lessons for Intergrated Water Resources Management.," in *Water Diplomacy in Action: Contigent Approaches to Managing Complex Water Problems*, ed. S Islam and K Madani (Univ Moratuwa, Inst Technol, Moratuwa, Sri Lanka, 2017), 265-288 WE.
[33] Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance."
[34] Thaler and Priest, "Partnership Funding in Flood Risk Management: New Localism Debate and Policy in England."
[35] Twigger-Ross et al., "Community Resilience to Climate Change: An Evidence Review."
[36] Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance."
[37] A. Fleming et al., "Perceptions of Co-Design, Co-Development and Co-Delivery (Co-3D) as Part of the Co-Production Process – Insights for Climate Services," *Climate Services* 30, no. January (2023): 100364, https://doi.org/10.1016/j.cliser.2023.100364; Tegan Brock, Maureen G. Reed, and Katherine J. Stewart, "A Practical Framework to Guide Collaborative Environmental Decision Making among Indigenous Peoples, Corporate, and Public Sectors," *Extractive Industries and Society* 14, no. March (2023), https://doi.org/10.1016/j.exis.2023.101246.
[38] Jakobsson et al., "Co-Producing Research on Psychosis: A Scoping Review on Barriers, Facilitators and Outcomes"; Farr et al., "Co-Producing Knowledge in Health and Social Care Research: Reflections on the Challenges and Ways to Enable More Equal Relationships."
[39] H Wilmer et al., "Expanded Ethical Principles for Research Partnership and Transdisciplinary Natural Resource Management Science," *ENVIRONMENTAL MANAGEMENT* 68, no. 4 (2021): 453–67, https://doi.org/10.1007/s00267-021-01508-4; McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management."

[40] Farr et al., “Co-Producing Knowledge in Health and Social Care Research”
[41] Sarah P. Saunders et al., “Bridging the Research-Implementation Gap in Avian Conservation with Translational Ecology,” *Ornithological Applications* 123, no. 3 (2021): 1–13, https://doi.org/10.1093/ornithapp/duab018.
[42] Sarah Hartley et al., “Experimenting with Co-Development: A Qualitative Study of Gene Drive Research for Malaria Control in Mali,” *Social Science and Medicine* 276, no. March (2021): 113850, https://doi.org/10.1016/j.socscimed.2021.113850.
[43] McEwen, “Co-Production and the Role of Lay Knowledge in Community Resilience.”
[44] Roger Green and Chris Baker, “Re-Empowering into Voice: Experiments in Organic Community Co-Production,” *Community Development Journal* 57, no. 2 (2022): 277–94, https://doi.org/10.1093/cdj/bsaa038.
[45] Glyn Everett, Olalekan Adekola, and Jessica Lamond, “Developing a Blue-Green Infrastructure (BGI) Community Engagement Framework Template,” *Urban Design International* 28, no. 3 (2023): 172–88, https://doi.org/10.1057/s41289-021-00167-5.
[46] Sarah Bell et al., “Establishing a Statement of Principles for Community Engagement with Civil Engineering,” *Proceedings of the Institution of Civil Engineers: Civil Engineering* 175, no. 3 (2022): 133–40, https://doi.org/10.1680/jcien.22.00007; Jakobsson et al., “Co-Producing Research on Psychosis: A Scoping Review on Barriers, Facilitators and Outcomes.”
[47] G. Carr, G. Blöschl, and D. P. Loucks, “Evaluating Participation in Water Resource Management: A Review,” *Water Resources Research* 48, no. 11 (2012): 1–17, https://doi.org/10.1029/2011WR011662.
[48] Saunders et al., “Bridging the Research-Implementation Gap in Avian Conservation with Translational Ecology.”
[49] Thoradeniya and Maheshwari, “Engaging Stakeholders for Water Diplomacy: Lessons for Intergrated Water Resources Management.”
[50] Bell et al., “Establishing a Statement of Principles for Community Engagement with Civil Engineering.”
[51] McEwen, “Co-Production and the Role of Lay Knowledge in Community Resilience.”
[52] Mothusiotsile Edwin Maditsi and Simeon Albert Materechera, “The Role of Indigenous Communities of Practice in Fostering Community Engagement and Partnerships for Sustainable Development in Africa.,” in *Sustainable Development in Africa: Fostering Sustainability in One of the World’s Most Promising Continents*, ed. Walter Leal Filho, Rudi Pretorius, and Luiza Olim de Sousa (Cham: Springer International Publishing, 2021), 3–18, https://doi.org/10.1007/978-3-030-74693-3_1; Farr et al., “Co-Producing Knowledge in Health and Social Care Research: Reflections on the Challenges and Ways to Enable More Equal Relationships.”
[53] Betty Pfefferbaum, Rose L. Pfefferbaum, and Richard L. Van Horn, “Community Resilience Interventions: Participatory, Assessment-Based, Action-Oriented Processes,” *American Behavioral Scientist* 59, no. 2 (2015): 238–53, https://doi.org/10.1177/0002764214550298.
[54] Bell et al., “Establishing a Statement of Principles for Community Engagement with Civil Engineering.”
[55] DeCaro et al., “Understanding and Applying Principles of Social Cognition and Decision Making in Adaptive Environmental Governance.”
[56] Mark S. Reed, “Stakeholder Participation for Environmental Management: A Literature Review,” *Biological Conservation* 141, no. 10 (2008): 2417–31, https://doi.org/10.1016/j.biocon.2008.07.014.
[57] DeCaro et al., “Understanding and Applying Principles of Social Cognition and Decision Making.”
[58] Meghan Alexander, Neelke Doorn, and Sally Priest, “Bridging the Legitimacy Gap—Translating Theory into Practical Signposts for Legitimate Flood Risk Governance,” *Regional Environmental Change* 18, no. 2 (2018): 397–408, https://doi.org/10.1007/s10113-017-1195-4; J. Dyer et al., “Assessing Participatory Practices in Community-Based Natural Resource Management: Experiences in Community Engagement from Southern Africa,” *Journal of Environmental Management* 137 (2014): 137–45, https://doi.org/10.1016/j.jenvman.2013.11.057; Fleming et al., “Perceptions of Co-Design, Co-Development and Co-Delivery (Co-3D) as Part of the Co-Production Process – Insights for Climate Services”; Everett, Adekola, and Lamond, “Developing a Blue-Green Infrastructure (BGI) Community Engagement Framework Template”; Farr et al., “Co-Producing Knowledge in Health and Social Care Research: Reflections on the Challenges and Ways to Enable More Equal Relationships”; McEwen, “Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management.”
[59] Dyer et al., “Assessing Participatory Practices in Community-Based Natural Resource Management: Experiences in Community Engagement from Southern Africa”; Carr, Blöschl, and Loucks, “Evaluating Participation in Water Resource Management: A Review.”
[60] Reed, “Stakeholder Participation for Environmental Management: A Literature Review.”
[61] Thoradeniya and Maheshwari, “Engaging Stakeholders for Water Diplomacy”
[62] Alexander, Doorn, and Priest, “Bridging the Legitimacy Gap—Translating Theory into Practical Signposts for Legitimate Flood Risk Governance”; Carr, Blöschl, and Loucks, “Evaluating Participation in Water Resource Management: A Review.”
[63] OECD, “Stakeholder Engagement and the Water Agenda.”
[64] Thoradeniya and Maheshwari, “Engaging Stakeholders for Water Diplomacy”
[65] Reed, “Stakeholder Participation for Environmental Management: A Literature Review.”
[66] Carr, Blöschl and Loucks “Evaluating Participation in Water Resource Management.”
[67] Carr, Blöschl and Loucks “Evaluating Participation in Water Resource Management.”
[68] Suzanne Hoverman et al., “Social Learning through Participatory Integrated Catchment Risk Assessment in the Solomon Islands,” *Ecology and Society* 16, no. 2 (2011), https://doi.org/10.5751/ES-04036-160217; Wouter Buytaert et al., “Citizen Science in Hydrology and Water Resources: Opportunities for Knowledge Generation,

Ecosystem Service Management, and Sustainable Development," *Frontiers in Earth Science* 2, no. October (2014): 1–21, https://doi.org/10.3389/feart.2014.00026.

[69] Kseniia Puzyreva, Zerline Henning, Renate Schelwald, Hannes Rassman, Emanuela Borgnino, Pieke de Beus, Sara Casartelli, and Daniel Leon, "Professionalization of Community Engagement in Flood Risk Management: Insights from Four European Countries," International Journal of Disaster Risk Reduction 71, no. August 2021 (2022): 102811, https://doi.org/10.1016/j.ijdrr.2022.102811.

[70] Puzyreva et al. ‘‘Professionalization of Community Engagement in Flood Risk Management"

[71] Everett, Adekola, and Lamond, "Developing a Blue-Green Infrastructure (BGI) Community Engagement Framework Template"; Hartley et al., "Experimenting with Co-Development: A Qualitative Study of Gene Drive Research for Malaria Control in Mali"; McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management."

[72] Nguyen et al., "How Does Integrated Knowledge Translation (IKT) Compare to Other Collaborative Research Approaches to Generating and Translating Knowledge? Learning from Experts in the Field."

[73] McEwen, "Co-Production and the Role of Lay Knowledge in Community Resilience."

[74] Nguyen et al., "How Does Integrated Knowledge Translation (IKT) Compare to Other Collaborative Research Approaches to Generating and Translating Knowledge?"

[75] Zurba et al., "Learning from Knowledge Co-Production Research and Practice in the Twenty-First Century"

[76] Mees et al., "Typologies of Citizen Co-Production in Flood Risk Governance."

BIBILIOGRAPHY

Adger, W. Neil, Tara Quinn, Irene Lorenzoni, and Conor Murphy. "Sharing the Pain: Perceptions of Fairness Affect Private and Public Response to Hazards." *Annals of the American Association of Geographers* 106, no. 5 (2016): 1079–96. https://doi.org/10.1080/24694452.2016.1182005.

Albert, Alexandra, Bálint Balázs, Eglė Butkevičienė, Katja Mayer, and Josep Perelló. "Citizen Social Science: New and Established Approaches to Participation in Social Research." In *Vohland K. et Al.(Eds). 2021. The Science of Citizen Science*, edited by Vohland Katrin, Land-Zandstra Anne, Ceccaroni Luigi, Lemmens Rob, and Perelló Josep, 119–38. Switzerland: Springer, 2021. https://doi.org/https://doi.org/10.1007/978-3-030-58278-4.

Alexander, Meghan, Neelke Doorn, and Sally Priest. "Bridging the Legitimacy Gap—Translating Theory into Practical Signposts for Legitimate Flood Risk Governance." *Regional Environmental Change* 18, no. 2 (2018): 397–408. https://doi.org/10.1007/s10113-017-1195-4.

Babcicky, Philipp, and Sebastian Seebauer. "The Two Faces of Social Capital in Private Flood Mitigation: Opposing Effects on Risk Perception, Self-Efficacy and Coping Capacity." *Journal of Risk Research* 20, no. 8 (2017): 1017–37. https://doi.org/10.1080/13669877.2016.1147489.

Bell, Sarah, Evan Boyle, John Canton, Zara Khan, Ruth Quinn, Edward Rollason, Kieran Tully, Sarah Ward, and Patricia Xavier. "Establishing a Statement of Principles for Community Engagement with Civil Engineering." *Proceedings of the Institution of Civil Engineers: Civil Engineering* 175, no. 3 (2022): 133–40. https://doi.org/10.1680/jcien.22.00007.

Bovaird, T., G. G. Van Ryzin, E. Loeffler, and S. Parrado. "Activating Citizens to Participate in Collective Co-Production of Public Services." *Journal of Social Policy* 44, no. 1 (2015): 1–23. https://doi.org/10.1017/S0047279414000567.

Brock, Tegan, Maureen G. Reed, and Katherine J. Stewart. "A Practical Framework to Guide Collaborative Environmental Decision Making among Indigenous Peoples, Corporate, and Public Sectors." *Extractive Industries and Society* 14, no. March (2023). https://doi.org/10.1016/j.exis.2023.101246.

Buytaert, Wouter, Zed Zulkafli, Sam Grainger, Luis Acosta, Tilashwork C. Alemie, Johan Bastiaensen, Bert De Bièvre, et al. "Citizen Science in Hydrology and Water Resources: Opportunities for Knowledge Generation, Ecosystem Service Management, and Sustainable Development." *Frontiers in Earth Science* 2, no. October (2014): 1–21. https://doi.org/10.3389/feart.2014.00026.

Carr, G., G. Blöschl, and D. P. Loucks. "Evaluating Participation in Water Resource Management: A Review." *Water Resources Research* 48, no. 11 (2012): 1–17. https://doi.org/10.1029/2011WR011662.

Cashman, A C. "Case Study of Institutional and Social Responses to Flooding: Reforming for Resilience?" *Journal of Flood Risk Management* 4, no. 1 (2011): 33–41. https://doi.org/10.1111/j.1753-318X.2010.01087.x.

DeCaro, D A, C A Arnold, E F Boamah, and A S Garmestani. "Understanding and Applying Principles of Social Cognition and Decision Making in Adaptive Environmental Governance." *ECOLOGY AND SOCIETY* 22, no. 1 (2017). https://doi.org/10.5751/ES-09154-220133.

Dyer, J., L. C. Stringer, A. J. Dougill, J. Leventon, M. Nshimbi, F. Chama, A. Kafwifwi, et al. "Assessing Participatory Practices in Community-Based Natural Resource Management: Experiences in Community Engagement from Southern Africa." *Journal of Environmental Management* 137 (2014): 137–45. https://doi.org/10.1016/j.jenvman.2013.11.057.

Erwin, Jo, Lorna Burns, Urshla Devalia, Robert Witton, Jill Shawe, Hannah Wheat, Nick Axford, et al. "Co-Production of Health and Social Science Research with Vulnerable Children and Young People: A Rapid Review." *Health Expectations* 27, no. 2 (2024). https://doi.org/10.1111/hex.13991.

Everett, Glyn, Olalekan Adekola, and Jessica Lamond. “Developing a Blue-Green Infrastructure (BGI) Community Engagement Framework Template.” *Urban Design International* 28, no. 3 (2023): 172–88. https://doi.org/10.1057/s41289-021-00167-5.

Farr, Michelle, Philippa Davies, Heidi Andrews, Darren Bagnall, Emer Brangan, and Rosemary Davies. “Co-Producing Knowledge in Health and Social Care Research: Reflections on the Challenges and Ways to Enable More Equal Relationships.” *Humanities and Social Sciences Communications* 8, no. 1 (2021): 1–7. https://doi.org/10.1057/s41599-021-00782-1.

Fitton, Sarah L, and Alice M Moncaster. “Arguments for a Co-Production Approach to Community Flood Protection.” *Proceedings of the Institution of Civil Engineers-Engineering Sustainability* 172, no. 7 (2019): 335–44. https://doi.org/https://doi.org/10.1680/jensu.17.00014.

Fleming, A., E. Bohensky, L. X.C. Dutra, B. B. Lin, J. Melbourne-Thomas, T. Moore, S. Stone-Jovicich, et al. “Perceptions of Co-Design, Co-Development and Co-Delivery (Co-3D) as Part of the Co-Production Process – Insights for Climate Services.” *Climate Services* 30, no. January (2023): 100364. https://doi.org/10.1016/j.cliser.2023.100364.

Forrest, Steven Ashley, Elen Maarja Trell, and Johan Woltjer. “Emerging Citizen Contributions, Roles and Interactions with Public Authorities in Dutch Pluvial Flood Risk Management.” *International Journal of Water Resources Development* 37, no. 1 (2021): 1–23. https://doi.org/10.1080/07900627.2019.1701999.

Green, Roger, and Chris Baker. “Re-Empowering into Voice: Experiments in Organic Community Co-Production.” *Community Development Journal* 57, no. 2 (2022): 277–94. https://doi.org/10.1093/cdj/bsaa038.

Hartley, Sarah, Katie Ledingham, Richard Owen, Sabina Leonelli, Samba Diarra, and Samba Diop. “Experimenting with Co-Development: A Qualitative Study of Gene Drive Research for Malaria Control in Mali.” *Social Science and Medicine* 276, no. March (2021): 113850. https://doi.org/10.1016/j.socscimed.2021.113850.

Hoverman, Suzanne, Helen Ross, Terence Chan, and Bronwyn Powell. “Social Learning through Participatory Integrated Catchment Risk Assessment in the Solomon Islands.” *Ecology and Society* 16, no. 2 (2011). https://doi.org/10.5751/ES-04036-160217.

Jakobsson, C. E., E. Genovesi, A. Afolayan, T. Bella-Awusah, O. Omobowale, M. Buyanga, R. Kakuma, and G. K. Ryan. “Co-Producing Research on Psychosis: A Scoping Review on Barriers, Facilitators and Outcomes.” *International Journal of Mental Health Systems* 17, no. 1 (2023): 1–25. https://doi.org/10.1186/s13033-023-00594-7.

Maditsi, Mothusiotsile Edwin, and Simeon Albert Materechera. “The Role of Indigenous Communities of Practice in Fostering Community Engagement and Partnerships for Sustainable Development in Africa.” In *Sustainable Development in Africa: Fostering Sustainability in One of the World’s Most Promising Continents*, edited by Walter Leal Filho, Rudi Pretorius, and Luiza Olim de Sousa, 3–18. Cham: Springer International Publishing, 2021. https://doi.org/10.1007/978-3-030-74693-3_1.

Masterson, Daniel, Kristina Areskoug Josefsson, Glenn Robert, Elisabeth Nylander, and Sofia Kjellström. “Mapping Definitions of Co-Production and Co-Design in Health and Social Care: A Systematic Scoping Review Providing Lessons for the Future.” *Health Expectations* 25, no. 3 (2022): 902–13. https://doi.org/10.1111/hex.13470.

McEwen, Lindsey. “Co-Production and the Role of Lay Knowledge in Community Resilience: Learnings for Local Flood Risk Management.” In *Research Handbook on Flood Risk Management*, 323–41. Edward Elgar Publishing, 2024.

Mees, Hannelore, Meghan Alexander, Mathilde Gralepois, Piotr Matczak, and Heleen Mees. “Typologies of Citizen Co-Production in Flood Risk Governance.” *Environmental Science and Policy* 89, no. September (2018): 330–39. https://doi.org/10.1016/j.envsci.2018.08.011.

Mees, Hannelore, Ann Crabbé, Meghan Alexander, Maria Kaufmann, Silvia Bruzzone, Lisa Lévy, and Jakub Lewandowski. “Coproducing Flood Risk Management through Citizen Involvement: Insights from Cross-Country Comparison in Europe.” *Ecology and Society* 21, no. 3 (2016). https://doi.org/10.5751/ES-08500-210307.

Mees, Hannelore, Ann Crabbé, and Peter P.J. Driessen. “Conditions for Citizen Co-Production in a Resilient, Efficient and Legitimate Flood Risk Governance Arrangement. A Tentative Framework.” *Journal of Environmental Policy and Planning* 19, no. 6 (2017): 827–42. https://doi.org/10.1080/1523908X.2017.1299623.

Mees, Hannelore, Barbara Tempels, Ann Crabbé, and Luuk Boelens. “Shifting Public-Private Responsibilities in Flemish Flood Risk Management. Towards a Co-Evolutionary Approach.” *Land Use Policy* 57 (2016): 23–33. https://doi.org/10.1016/j.landusepol.2016.05.012.

Nguyen, Tram, Ian D. Graham, Kelly J. Mrklas, Sarah Bowen, Margaret Cargo, Carole A. Estabrooks, Anita Kothari, et al. “How Does Integrated Knowledge Translation (IKT) Compare to Other Collaborative Research Approaches to Generating and Translating Knowledge? Learning from Experts in the Field.” *Health Research Policy and Systems* 18, no. 1 (2020): 1–20. https://doi.org/10.1186/s12961-020-0539-6.

OECD. “Stakeholder Engagement and the Water Agenda.” In *Stakeholder Engagement for Inclusive Water Governance*, 29–52. Paris: OECD Publishing, 2015. https://doi.org/10.1787/9789264231122.

Orr, Paula, Clare Twigger-Ross, Katya Brooks, and Rolands Sadauskis. “‘Pieces of Kit’ Are Not Enough: The Role of Infrastructure in Community Resilience.” In *E3S Web of Conferences*, Vol. 7, 2016. https://doi.org/10.1051/e3sconf/20160708009.

Ostrom, Elinor, William H Baugh, Richard Guarasci, Roger B Parks, and Gordon P Whitaker. *Community Organization and the Provision of Police Services*. Vol. 1. Sage Publ., 1973.

Ostrom, Elinor, Roger B Parks, Gordon P Whitaker, and Stephen L Percy. "The Public Service Production Process: A Framework for Analyzing Police Services." *Policy Studies Journal* 7 (1978).

Pfefferbaum, Betty, Rose L. Pfefferbaum, and Richard L. Van Horn. "Community Resilience Interventions: Participatory, Assessment-Based, Action-Oriented Processes." *American Behavioral Scientist* 59, no. 2 (2015): 238–53. https://doi.org/10.1177/0002764214550298.

Potter, Karen. "Cementing 'Stakeholder Collaboration' into Flood Risk Management." In *Flood Handbook*, 171–92. Taylor & Francis, 2022. https://doi.org/https://doi.org/10.1201/9781003262640-9.

Puzyreva, Kseniia, Zerline Henning, Renate Schelwald, Hannes Rassman, Emanuela Borgnino, Pieke de Beus, Sara Casartelli, and Daniel Leon. "Professionalization of Community Engagement in Flood Risk Management: Insights from Four European Countries." *International Journal of Disaster Risk Reduction* 71, no. August 2021 (2022): 102811. https://doi.org/10.1016/j.ijdrr.2022.102811.

Reed, Mark S. "Stakeholder Participation for Environmental Management: A Literature Review." *Biological Conservation* 141, no. 10 (2008): 2417–31. https://doi.org/10.1016/j.biocon.2008.07.014.

Saunders, Sarah P., Joanna X. Wu, Elizabeth A. Gow, Evan Adams, Brooke L. Bateman, Trina Bayard, Stephanie Beilke, et al. "Bridging the Research-Implementation Gap in Avian Conservation with Translational Ecology." *Ornithological Applications* 123, no. 3 (2021): 1–13. https://doi.org/10.1093/ornithapp/duab018.

Seebauer, Sebastian, Stefan Ortner, Philipp Babcicky, and Thomas Thaler. "Bottom-up Citizen Initiatives as Emergent Actors in Flood Risk Management: Mapping Roles, Relations and Limitations." *Journal of Flood Risk Management* 12, no. 3 (2019): 1–17. https://doi.org/10.1111/jfr3.12468.

Spicer, Suzanne. "Researcher's Guide to Engagement. The 'Afterlife of Heritage Research' Training Programme." University of Manchester, 2013. https://documents.manchester.ac.uk/display.aspx?DocID=28845#:~:text=The Public Engagement Onion,-making to information-giving.

Thaler, Thomas, and Sally Priest. "Partnership Funding in Flood Risk Management: New Localism Debate and Policy in England." *Area* 46, no. 4 (2014): 418–25. https://doi.org/10.1111/area.12135.

Thoradeniya, B, and B Maheshwari. "Engaging Stakeholders for Water Diplomacy: Lessons for Intergrated Water Resources Management." In *Water Diplomacy in Action: Contigent Approaches to Managing Complex Water Problems*, edited by S Islam and K Madani, 265-288 WE. Univ Moratuwa, Inst Technol, Moratuwa, Sri Lanka, 2017.

Trogrlić, Robert Šakić, Grant B. Wright, Melanie J. Duncan, Marc J.C. van den Homberg, Adebayo J. Adeloye, Faidess D. Mwale, and Joyce Mwafulirwa. "Characterising Local Knowledge across the Flood Risk Management Cycle: A Case Study of Southern Malawi." *Sustainability (Switzerland)* 11, no. 6 (2019). https://doi.org/10.3390/su11061681.

Twigger-Ross, Clare, Katya Brooks, Liza Papadopoulou, Paula Orr, Rolands Sadauskis, Alexia Coke, Neil Simcock, Andrew Stirling, and Gordon Walker. "Community Resilience to Climate Change: An Evidence Review." Joseph Rowntree Foundation, 2015. https://researchonline.ljmu.ac.uk/id/eprint/15793/7/Community resilience to climate change an evidence review.pdf.

Vanleene, Daphne, Joris Voets, and Bram Verschuere. "The Co-Production of a Community: Engaging Citizens in Derelict Neighbourhoods." *Voluntas* 29, no. 1 (2018): 201–21. https://doi.org/10.1007/s11266-017-9903-8.

Werritty, Alan. "Sustainable Flood Management: Oxymoron or New Paradigm?" *Area* 38, no. 1 (2006): 16–23. https://doi.org/10.1111/j.1475-4762.2006.00658.x.

Wilmer, H, A M Meadow, A B Brymer, S R Carroll, D B Ferguson, I Garba, C Greene, G Owen, and D E Peck. "Expanded Ethical Principles for Research Partnership and Transdisciplinary Natural Resource Management Science." *ENVIRONMENTAL MANAGEMENT* 68, no. 4 (2021): 453–67. https://doi.org/10.1007/s00267-021-01508-4.

Wittels, P., T. Kay, and L. Mansfield. "Enabling Mothers of Young Children in a Low SES Area to Co-Design the Support They Are Seeking for the Adoption of Healthy Behaviours." *Perspectives in Public Health* XX, no. X (2023): 1–6. https://doi.org/10.1177/17579139231205488.

Zurba, Melanie, Michael A. Petriello, Carly Madge, Paul McCarney, Breanna Bishop, Samantha McBeth, Mary Denniston, Hekia Bodwitch, and Megan Bailey. "Learning from Knowledge Co-Production Research and Practice in the Twenty-First Century: Global Lessons and What They Mean for Collaborative Research in Nunatsiavut." *Sustainability Science* 17, no. 2 (2022): 449–67. https://doi.org/10.1007/s11625-021-00996-x.