

RESEARCH ARTICLE

Contesting Forms of Knowledge in Policy Deliberation: Lessons from Disaster Coping Policies in Thailand

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This article presents the case of policy deliberation on disaster coping strategies in Bangkok, Thailand. It demonstrates the challenges scientists faced when they sought to influence policymaking on flood mitigation. The article demonstrates different forms of knowledge that shaped Bangkok's flood policy, and explains how lay knowledge promoted by farmers, local communities, and Buddhist monks were successful in persuading policymakers and the wider public in their preferred policy option. Meanwhile, scientific knowledge failed to make their case in public forums, and on some occasions, even alienated Thai citizens. The article concludes by drawing lessons on how scientific and lay knowledge can better contest as well as connect their claims to enrich the process and outcomes of public deliberation on disaster coping policy.

Keywords: expert knowledge; lay knowledge; disasters; critical policy analysis; deliberative policy analysis; Thailand

Introduction

Different forms of knowledge are valuable in policy deliberations on disaster coping strategies. While some argue that scientists and experts should drive policymaking, deliberative democrats emphasise the value of inclusive deliberations to generate legitimate outcomes. In practice, this means seriously considering the reasons of lay citizens, community leaders as well as cultural actors like religious leaders before making binding decisions. It also means paying attention to emotional and personal aspects of deliberation, especially when an issue like a disaster evokes feelings of sentimentality and national identity.

This article presents the case of policy deliberation about disaster coping strategies in Bangkok, Thailand. It describes the dynamics of policy deliberations between scientific experts and local practitioners including farmers, Buddhist monks, and lay citizens, on how to manage extreme flooding in the capital. The article argues that scientific evidence cannot assume paramount importance on a technical issue like flood mitigation. Instead, scientific evidence needs to learn how to engage with creative policy actors who are able construct their arguments based on everyday knowledge, as well as relationships of trust and emotional connection they built with the public during crisis situations. Overall, this article seeks to prompt further conversations about the different

forms of knowledge in policy deliberation and the ways in which these forms of knowledge contest and complement each other to reach mutually justifiable outcomes.

Forms of Knowledge in Policy Deliberation

Understanding the role of knowledge is central to policy analysis (Lindblom, 1959; Lasswell, 1970; Hogwood & Gunn, 1984; Dunn, 2018). Different policy actors bring different forms of knowledge to the policy process, which makes this topic pertinent for scholars of deliberative democracy in general, and deliberative policy analysis in particular (Fischer, 2003; Plehwe, 2015). Scholars of deliberative democracy are interested in understanding how different forms of knowledge circulate in the public sphere, and how the contestation of different knowledge claims influence collective decision-making. Meanwhile, those in the field of deliberative policy analysis provide an alternative approach to technical policy analysis by including the knowledge and views of laypeople in the policy world (Hajer and Wagenaar 2003). This approach has its origins in the argumentative turn in policy analysis (Fischer & Boossabong, 2018; Fischer & Forester, 1993; Fischer & Gottweis, 2012), while Habermas' ideas on the public sphere and communicative action are also influential (Habermas, 1987).

To focus on knowledge within deliberative policy analysis necessitates a focus on policy epistemological debates, which are at the root of the study of policy analysis. By challenging technocratic policy analysis, deliberative policy inquiry finds it insufficient to analyse public policy with technical or expert forms of knowledge, such as cost-benefit analysis, pay-off matrices, decision

trees, econometrics, time-series analysis, modelling, game analysis, system analysis, stages analysis, strategic thinking, scenario mapping, computer simulation, and so on. It is a mistake to think that the purpose of policy analysis in degree programmes is to learn only policy toolboxes to be deployed as a professional policy analyst specialised in international and modern knowledge. Aside from a reliance on expert knowledge in policy analysis, deliberative policy scholars also advocate the role of local knowledge (e.g. Fischer, 2000; Yanow, 2003; Rydin, 2007). They begin with the epistemological assumption that knowledge is socially constructed, multiple, and constituted in the form of claims that are open to contestation and recognition (Rydin, 2007: 52–68). For deliberative policy analysis, expert knowledge is developed based on technical control over objectified processes and generated within a framework of instrumental rationality, which itself takes on the form of a productive force (Habermas 2007; Foucault, 1980). This form of knowledge is also mainly based on economic and scientific modes of rationality, which tend to ignore socio-cultural contexts, whereas local knowledge is more sensitive to them (Yanow, 2003).

This does not mean that deliberative policy scholars ignore expert knowledge and promote only local forms of knowledge. Instead, they think that different forms of knowledge should be brought to the table if better agreements are to be made. Habermas (1991) addresses the importance of honesty, sincerity, and openness to people's views and to available knowledge. Among deliberative policy scholars, Fischer (1995, 2000, 2003, 2009) pays attention to the integration or articulation of expert and local knowledge in analysing policy as a way to justify rational and normative assumptions. The critical point Fischer (2000) made is that to recognise both local and expert forms of knowledge is to go beyond the positivist tradition. He explains that local knowledge offers a different epistemology when making claims. According to Fischer (2009), deliberation implies the exchange of expert and local knowledge, which can deliver transformative learning and develops emancipatory knowledge. Fischer claims that knowledge exchange can also deliver practical knowledge, which is required for collective decision-making and action. Thus, to push for meaningful policy deliberation, we need to learn from policy deliberation where both expert knowledge and local knowledge are given due attention.

In the empirical section of this article, we use the terms expert or scientific knowledge and local or practitioner knowledge. We adopt Yvonne Rydin's (2007) definition of expert knowledge as the outcome of a scientific process of understanding based on an instrumental form of rationality. Instrumental rationality is a mindset that puts faith in empirical evidence (clear facts) and the scientific method (empirical proof), appeals to experts to justify decisions, logical consistency and universality of findings (Fischer 1995). On the other hand, local knowledge is defined as ordinary knowledge, which might not be based on scientific inquiry such as objective observation and valid experiments or testing. This form of knowledge

tends to emphasise (or at least give equal weight to) the opinions of traditional and peer groups over those of experts. This type of knowledge focuses on personal and familiar experiences rather than depersonalised calculations, holding unanticipated consequences to be fully relevant to near-term decision-making, and trusts process rather than evidence (Fischer, 2003). It might also involve superficial beliefs, unprovable legends, traditional practices, ceremony and myth (Yanow, 2003). Apart from that, local knowledge might have developed from common sense without causal empiricism. In addition, this form of knowledge is often not written down, as it is preserved in oral traditions rather than texts (Fischer, 2000). It is the dynamic between these kinds of knowledge in policy deliberations that will be the focus of our empirical discussion.

Disaster Coping Policies in Thailand

The case of disaster management policies in Thailand demonstrates the value of different forms of knowledge in enriching public deliberation. While expert knowledge is available to provide technical input in the policy process, expert discourses do not dominate the discussion. Laypeople using local knowledge were influential in public debates and, in cases of disasters, tend to be sceptical about scientific claims.

The National Disaster Prevention and Mitigation Plan of 2015 is an example. The Plan has a provision to transfer technical knowledge on forecasting and risk analysis from abroad (National Board of Disaster Prevention and Mitigation, 2015: 13–14). Technical knowledge, however, is not the privileged discourse on this issue. Local knowledge also plays a key function. For example, the government arranged a sacred ceremony during storms in the period of October to November to pay respect to the gods of the climate and ask them to stop heavy rains and protect the Thai people. Policymakers and environmental policy analysts agreed on this cultural practice for its positive psychological effect on laypeople's physical and mental security. This was not a one-off decision, but a regular policy action when storms came (Jantanasakulwong, 2017). Similarly, local herbal healthcare knowledge was promoted alongside modern healthcare services and, in the post-disaster period, local seed collection methods, as lay knowledge generated from traditional practices of farmers in classifying and storing local seeds based on their nature and weather conditions, were supported to help farmers whose agricultural products were damaged by floods (National Board of Disaster Prevention and Mitigation, 2015: 86, 92). In addition, many local authorities proposed a return to a traditional irrigation management system to control water drainage (Wandee & Dhurata, 2015). These examples demonstrate the co-existence, if not mutual reinforcement, of different knowledge claims in disaster governance.

Deliberative facilitators also play a key role in connecting expert and lay knowledge. The Social Service Unit of Thammasat University took part in developing Bangkok's flood warning system by connecting the discourses of experts from the City Water Draining Agency and local

communities in the Bang Bour District. The Agency claimed that it could open the floodgate to two metres, while different members of local communities estimated that the water level might be higher or lower than that. Local community members could not provide a specific number but talked instead in terms of body height and housing dimensions. Some said that the water level was the same as their shoulders and some said it was higher than their first-floor window. This demonstrated that opening the floodgate by two metres led to different water levels in different areas. The translation of different forms of knowledge from one target to another, then, led to the creation of a warning system based on mutual understanding and cooperation (Boossabong, 2017).

There are other examples of how different forms of knowledge intersect in Thailand's disaster coping policies. This article focuses on the case of disaster mitigation policies in Bangkok. The Bangkok metropolitan region usually experiences seasonal floods, especially on the fringes of the city. However, serious flooding affected large parts of the city in 2011 and 2017. In both instances, roughly thirty percent of the entire metropolitan region was submerged in water. Household wastewater spread widely during the floods which caused serious ailments. To cope with such problem, policymakers endorsed the use of locally made effective microorganisms (EM). This is a traditional technique used to reduce wastewater. EM was made by using available local resources including organic wastes, soil, rice bran, rice husk, molasses, and water. They were mixed and left for three days for the metabolic process of fermentation (Social entrepreneur and farming trainer, personal communication, October 15, 2017). This lay knowledge was used for cleaning the water and eliminating the bad smell.

The effectiveness of EM cleaning solution products was contentious. Urban farmers, trainers promoting self-reliance through 'Do-it-yourself' practices and Buddhist monks who are active in social development programmes promoted the use of locally made EM cleaning solution products. In 2011, around 2,000 people volunteered to produce and distribute EM products to city dwellers. Celebrities from popular television dramas supported this initiative, while the media gave prominence to this practice in their coverage, especially about social engagement in creating the products. Regional and local governments in the Bangkok metropolitan region organised centres for EM cleaning solution production, and provided staff, trucks, and boats to distribute EM cleaning solution to city dwellers and to pour it into the wastewater.

Meanwhile, experts from universities argued against the use of EM for they would increase waste. This prompted an intensive policy deliberation on November 8, 2011 and a repeated policy discussion in October 14, 2017.

Methodology

To understand the interaction of different forms of knowledge in public deliberation, we analyse the dynamics of policy deliberation on wastewater treatment using EM. Our analysis is based on the following sources of data:

1. *Fieldwork interviews.* These interviews were conducted from 15 to 17 October 2017 after the first day of damaging floods. We interviewed eight flood victims and four street-level bureaucrats including the civil servants working at the District Administration Office and the City Water Draining Agency. They were selected based on 'accidental sampling,' which is normally used for the rapid assessment method. Those samples were directly related to the incident either as victims or as operational officers. We also interviewed six community leaders and two social entrepreneurs. We recruited them through voluntary and snowball sampling, which depended on their well-recognition as key active agents and their availability. We treated the social entrepreneurs as key informants in the sense that they played an active role in promoting EM products and they were perceived as influencers who framed the public discourse on the usefulness of such local knowledge.
2. *Review of forums.* We reviewed six recorded consecutive video clips and one separate clip. These seven clips contain the policy deliberation of two consequential forums. We describe them as consequential because they then were referred to by the Bangkok governor as supporting policy decision. The first consequential forum was broadcast on television during primetime by the Nation Channel in 8 November 2011. So the issue could grab social attention, the Bangkok Metropolitan Administration Office stepped in and hosted the forum by inviting representatives of the different voices. The participants included the representative from the Bangkok Metropolitan Administration Office, the organic farmers' leader, the urban farming trainer, and two professors from Chulalongkorn University and Kasetsart University with the facilitation of the forum by a famous news reporter of the Kom Chad Luek News.

The second influential forum was broadcast on the ThaiPBS Channel on 14 October 2017 with mostly the same group of participants. The additional participant was the local Buddhist monk who actively promoted the EM cleaning solution to the members of the community that the temple was located in. This forum was also facilitated by a famous news reporter of the ThaiPBS channel.

All participants are anonymised in the report. All of them gave us consent to refer to their opinions in our study. The research cluster on disaster coping policies in Thailand was granted an ethics clearance from Mahasarakham University.

Data Analysis

To systematically analyse the data we have gathered, we examined the different forms of knowledge in policy deliberation. As a starting point, we used Fisher's approach (1995: 231) called the 'logic of policy deliberation' which offers four levels of analysis:

1. The reasons given behind technical efficiency, which refers to the analysis of whether valid information gained from the professional analysis is used to support the argument.
2. Relevance of reasons offered to particular circumstances, which refers to the analysis of whether context-sensitive information based on the specific situation is used.
3. The relation of reasons to the existing social norms, which refers to the analysis of whether the given information sits well with what the people believe based on their cultural rationality.
4. The relation of reasons to the ideological principles that justify what 'the good society' would look like in the eyes of the people. The analysis thus focuses on whether the reasons align with the expectation of the people about the plausible future.

To put it simply, we examine the different rationalities, evidence or proof different policy actors put forward to construct a narrative or discourse (Gottweis 2006, 2007).

We refer to Fischer's approach as a starting point because we also recognise that knowledge is constructed beyond the use of reason or logic. Our analysis borrows the tools of rhetorical analysis, which not only focuses on the logos of deliberation, but also on the ethos and the pathos of the speaker. Ethos refers to the morality of speakers, which is usually based on trust, respect, authority, honesty, and credibility. Meanwhile, pathos refers to various emotions, most typically empathy, sympathy, and sensibility. Expressing pathos implies the expression of suffering, fear, anger, disgust, excitement, and jealousy. Contributions of different forms of knowledge may use all three components of Aristotelian rhetoric, although they can also be logo-centric, etho-centric, or patho-centric (Gottweis 2007: 245). Adding these two analytical components in our study is important because the impacts of knowledge are based not only on what reasons it gives, but also who addresses it and how. All in all, this analytical framework would help to frame an analysis for understanding the influence of different forms of knowledge along a deliberative spectrum.

Logos: Different Knowledge as Different Logics of Policy Deliberation

How did policy actors put forward different forms of knowledge during policy deliberations? We observed different approaches based on Fischer's logic of policy deliberation.

1. *Reasons given behind technical efficiency.* During the first televised forum on EM, scientists and experts working in think tanks established their technical efficiency by citing international research and scientific evidence. An environmental engineer from Chulalongkorn University cited the example of Japan which did not use EM cleaning solution after a tsunami in 2011. Although he mentioned that Japan used a similar method of fermenting micro-organisms during

normal conditions in order to clean wastewater, this argument sought to establish the validity of his argument by invoking the credibility of the science used in an advanced industrialised nation. The environmental engineer also supported his arguments based on results of scientific experiments published in reputable academic journals. Another scientist from Kasetsart University presented findings of laboratory studies that demonstrated how the use of micro-organisms for water treatment technique ended up increasing instead of managing waste. Meanwhile, a leader of the farmers' group, together with a farming trainer, who works as a social entrepreneur that trains how to do vegetable gardening and cope with wastewater at home, supported the use of the EM cleaning solution. They argued based on experience. They explained how they normally use EM products to treat water in their own homes, which were located in the area that faced seasonal floods.

2. *Relevance of reasons offered to particular circumstances.* The scientists failed to place their argument in a particular context while lay citizens were effective in doing so. Lay citizens critiqued the scientific evidence for importing knowledge from countries like Japan that are not relevant to Thailand. At the same time, they used the feelings and experiences of residents living in many parts of the city as evidence. The discourse of usefulness of a local product, made through the organic metabolic process of fermentation in the context of Thai society, has been produced and reproduced for more than half a century (Falvey, 2000), such that it has been embedded in the belief system as a valuable form of local knowledge and people usually practise it in their own houses without questioning its effectiveness (Farming trainer, personal communication, October 15, 2017). So, the idea that EM products are useful could convince laypeople as it supported by their previous direct experiences and their common sense. One flood victim said that he knew it worked as he could see many clear changes including the fact that the water was cleaner (Flood victim, personal communication, October 16, 2017). With the backing of such contextual experiences, the farmers' leader in the forum pointed out that scientists should come to see what he and many people did rather than to talk about something they never experienced by themselves.

Apart from a failure to place the argument in a particular context, scientific knowledge was categorised in terms of technical knowledge, which has questionable legitimacy during such disasters. Such knowledge has been blamed as a cause of the crisis and part of the failure to deal with it. For example, one victim of the floods both in 2011 and 2017 mentioned that she and her neighbours blamed experts for failing to predict and control the flood (*Keha Tung Songhong* community leader, personal communication, October 16, 2017). The distrust of technical knowledge in this context partly brought about a distrust of scientific arguments,

as they challenged the use of EM cleaning solution. Consequently, the legitimacy crisis of experts, with their technical rationality, opened a window of opportunity for local knowledge and its cultural rationality.

Not only during these two crises, but during other previous crises the credibility of technical knowledge has been reduced. The reason for this is that Thailand has been modernised by depending highly on transferring technical knowledge. The city has also been shaped and controlled by a highly educated governor, aided by a few high-profile technocrats. External and modern knowledge, then, was blamed when the city's infrastructure failed to function. At the same time, previous crises showed that the preference for local knowledge has become a shared lifeworld of the people when faced with risk and uncertain situations (Jantasakulwong, 2017). The preference involves a recall of the 'old days' and a recovery of traditional wisdom, rooted mainly in the Thai way of life, which also sheds light on a locally made EM product.

3. *The relation of reasons to existing social norms.* Scientists also failed when putting forward and laying out the instrumental implications of their argument for the Thai socio-cultural system as a whole, while local practitioners succeeded more in doing so. EM cleaning solution produced and used by the people themselves to enhance their climate change adaptive capacity matches very well with the long-held tradition of self-reliance underpinned by Buddhist principles (Sivaraksa, 2011). The discourse of self-reliance has been promoted strongly since the Asian economic crisis in 1997. The 9th King played an important role in promoting this tradition, such that it has found its way into a number of development policies and plans (Boossabong, 2017). So, to enhance people's self-reliance is usually seen as one objective of many policies and plans.
4. *The relation of reasons to the ideological principles that justify what 'the good society' would look like in the eyes of the people.* Scientists failed to link their argument to ideological principles that justify the shared expectation of the general Thai people on 'what should be' in their society. On the other hand, to promote local knowledge is also to promote a sense of Thai-ness (Pruksorranan, Wisansing & Vongvisitsin, 2018). The discourse of Thai-ness is an interactive discourse, which frames the way people propose the 'sound good' statement when they make a claim. For example, Thailand is the land of smiles, and Thai people are always kind. To propose this discourse, it is hard for anybody to say that they disagree with it, although they might disagree internally. In this sense, to mobilise people to make and allocate EM cleaning solution collaboratively could reflect reciprocity and mutual aid among Thai people during a difficult time, which promotes the core value of the 'good society' that the Thai people in general strive for. To come together to make and allocate EM cleaning solutions also reflects a strong sense of unity, kindness, inclusiveness, power to the people, participation, collaboration, and so on. Whether EM cleaning solution is useful or not, the

fact that it was able to build such senses meant that policymakers were happy to support them.

The above analysis shows that impactful knowledge in policy deliberation depends not only on its technical efficiency, but also on its connection to the context, socio-cultural norms and the people's expectation on what should be. In this case, it shows why local knowledge matters in influencing the public discourse. Although this form of knowledge might not be claimed superior for its technical efficiency, it could be articulated better to the context, the existing norms, and the expectation of the people.

Ethos: Reputation and Trust of Scientific and Local Knowledge

The debates between scientists and local practitioners show that the attributes of the speakers (ethos) affected whether the logic was convincing. For a flood victim, the image of the scientist in Thailand was one of a nerdy scholar working either in the lab or in the library and producing knowledge irrelevant to the practical world. Meanwhile, practitioners like farmers better understand the real world because of their practical experience (Flood victim, personal communication, October 16, 2017). Such images have been partially constructed by Buddhist principles, which advocate paying respect to a practitioner. As noticed by a farming trainer, the presence of the Buddhist monk in the forum made a significant effect as many Thai people believe monks rather than university scholars, as what they say is expected to come from what they have practised rather than what they have read (Social entrepreneur and farming trainer, personal communication, October 15, 2017). The story of Buddha himself has affected the way Thai people think. He was a practitioner who realised truth by practising self-actualisation (Sivaraksa, 2011). Thai people in general are familiar with his story. His character has been socially constructed as the stereotype of the 'real' expert.

Alongside their image, trust in speakers also affected the persuasiveness of their arguments. Laypeople's distrust of scientists during the flooding crisis also affected the trust people have in local practitioners and their knowledge as local practitioners engaged in 'down-to-earth' action to respond to the situation instead of 'just critiquing' from the ivory tower as scientists did. Local practitioners like city farmers gained the trust of the wider public for the role they played in responding to the food shortages. As floods disrupted the food chain of large food corporations who control the modern trade system, city farmers provided alternative food sources and acted as a buffer for city dwellers against extreme climate events. They distributed food grown in community gardens to low-income communities in Bangkok, and inspired city dwellers to start growing their own food (Boossabong, 2019).

Pathos: Emotional Expressions in a Crisis Situation

Emotional expressions have a role to play in public deliberation (Krause 2008). Deliberative scholars have long recognised that deliberation cannot thrive with

dispassionate reason-giving for this form of argumentation privileges speech cultures associated to scholars, scientists, judges, and experts. Indeed, deliberation needs to foster shared feelings for collective emotions are crucial for mobilising the public necessary for public deliberation (Curato 2019). This is why storytelling, jokes, and testimonies, as well as creative forms of discussion in broadcast and digital media, are essential practices in deliberative politics (see Young 2002). Deliberative democracy, as understood today, welcomes plural forms of speech and knowledge (see Curato, Dryzek, Ercan, Hendriks and Niemeyer 2017).

Thailand's media culture plays a key role in shaping the nature of discourse of deliberation in Thailand (Malikhao 2017). Thailand, after all, is among the first Asian countries that embraced film, radio, and television as part of national development and cultural identity (Ginsburg, Abu-Lughod and Larkin, 2002). Thais are socialised to watching television dramas, which has shaped how citizens react to sensitive stories, whether in the realm of truth or fiction. Thai language is also composed of a lot of emotional words, such as more than fifty ways to express happiness and sadness (Malikhao 2017). With these characteristics, emotional expressions are embedded in the Thai culture and certainly influenced interactions among people in the Thai society.

There was a pronounced difference with the way scientists and local practitioners expressed their emotions in televised forums. Laypeople invoked familiar proverbs like 'you give a poor man a fish and you feed him for a day. You teach him to fish, and you feed him for a lifetime' which generated positive feelings of self-reliance. This demonstrated the intention of laypeople to step in and solve the problem of wastewater themselves with the knowledge transfer from practitioners. This encouraged people to reach out to others and contribute to disaster response by taking part in manufacturing EM cleaning solution. Consequently, policymakers promoted this practice partly as they realised that manufacturing EM promotes collaborative effort, which uses mainly basic materials available in the city and accessible by most households, such as organic wastes, soil, and rice bran.

Scientific knowledge, meanwhile, failed to produce positive emotional responses from the public. The Bangkok Metropolitan Administration Office's Facebook page and YouTube channel received unenthusiastic comments and failed to persuade citizens to listen to and agree with scientists. The language used in these digital platforms failed to connect to the emotions of the audiences for the speakers presented information as if they were talking to fellow scientists and used technical terms without explaining them. For example, a professor of environmental engineering from Chulalongkorn University explained how 'lactic acid' made by 'Aerobic' and 'Anaerobic' bacteria in EM products worked. He referred to 'Cellulase', 'Trichoderma', 'Penicillium spp.', 'BOD', 'pH', 'Eutropidication' which alienated viewers unfamiliar with these terms.

Moreover, scientists who participated in forums did not try to mobilise social support. Their focus was limited to presenting scientific evidence and citing credible sources.

On one occasion, a scientist provoked public outrage by shaming supporters of EM cleaning solution. He told them 'you not only fail to solve the problem, but you also damage this city.' He appealed that the society should be driven 'by knowledge not by myths' which devalues the contributions of local practitioners in the discussion. This statement was met by public anger. People felt disparaged as if their knowledge were unworthy of recognition. In a public forum in 2011, a local practitioner who trained how to make EM solution expressed a metaphor that captures the public's ill feelings against scientists. He told the scientists, 'you do not help row the boat. You lay your feet to the lake to make rowing more difficult.' In Thai, this statement is used as metaphor to refer to a person who does not try to solve the problem, but at the same time he/she makes it worse.

In contrast to the scientists, local practitioners worked to mobilise social support before agreeing to join the forum. They engaged in participatory process by mobilising a variety of collective actions both in producing EM cleaning solutions together with volunteers and distributing them.

Outcomes of Deliberation

Thus far, we have demonstrated the differences between the knowledge offered by scientists and local practitioners as they sought to influence policy deliberation on flooding and wastewater treatment in Bangkok. We conclude our empirical section by describing the outcomes of deliberation years after contestation between these two knowledge claims took place.

In October 2017, Bangkok was hit by another devastating flood. Policymakers reconsidered implementing the same policy of using EM products. The deliberations between scientists and local practitioners took a different dynamic this time. One could argue that both policy actors have learned lessons from the previous years. They recognised their interlocutors' different modes of rationality. They paid respect to each other's knowledge claims. After repeated discussions between the two sides as well as consideration of feedback from the wider public, scientists and local practitioners reached mutual understanding.

Another public forum was held to revisit the policy on using EM products to treat wastewater. This time, local practitioners qualified their claim. They declared that using EM products works best at the household scale. They also admitted that this was not a solution for the whole city and other large-scale projects, such as to cope with wastewater in the long river and the large lake. Scientists, meanwhile, learned to cultivate a congenial relationship with local practitioners and recognise their social lifeworld. They took a friendlier tone to the discussion, especially after realising that many people agreed with the policy of using EM cleaning solution.

Scientists continue to hold their reservations against the knowledge presented by local practitioners, so in this sense public deliberation did result in consensus or complete agreement. What the policy deliberation accomplished, however, was the increased capacity of scientists to recognise the legitimacy of laypeople's knowledge. Thailand's new policy culture emphasises inclusiveness,

as a result of continued pressure from ordinary citizens. In 2017, the Bangkok Metropolitan Administration took a clearer policy direction than in 2011 by pointing out that the agency would promote the local initiative of EM cleaning liquid for use mainly in community and household units, while scientific and technological solutions for wastewater treatment would be used in parallel to operate in larger and more systematic ways.

Discussion

What lessons can be learned from this case study? We offer three key lessons.

First, we learned the importance of developing a framework that unpacks the dynamic of public deliberation where interlocutors put forward different forms of knowledge. The framework we offer allows us to challenge the privilege technocratic policymaking accords to scientific evidence and instead broaden our analysis to recognise how policies are influenced by various modes of rationality (Fischer & Boossabong, 2018; Fischer & Forester, 1993; Hajer & Wagenaar, 2003). The case study presented demonstrates the dynamics of deliberation when socio-cultural and ecological modes of rationality interact with scientific and economic modes of rationality.

This approach also allowed us to uncover the different manifestations of power in policymaking, which is a central concern of critical policy analysis (Fischer, Torgerson, Durnova & Orsini, 2015). Our analysis of power examined how inequalities are embedded in communication and argumentation, which is different from power as a form of instrumentation, as emphasised by mainstream policy approaches. Through this lens, our analysis was able to identify how scientists construct the discursive power of their claims by using exclusionary and intimidating terms. Indeed, there has been rich scholarship in understanding the role of knowledge in policymaking in contexts from the Global North (Delvaux & Schoenaers, 2012; Leino & Peltomaa, 2012; Carmichael, 2009) and in the Global South (Nugroho, Carden & Antlov, 2018; Li, 2017; Kelly, 2012). While our case study is distinctive in the sense that we focused on policy deliberation on uncertain situations like post-disaster Bangkok, we find that the tactics used in excluding local knowledge are the same. This includes drawing boundaries of expert knowledge, using the technical language of scientific reasoning, formal guidelines, and official terms. However, our study also finds that such tactics are not always effective. Our case study illustrated how local practitioners challenged such power by using plain language, relatable proverbs, and emotional forms of argumentation that brings the public into the conversation.

Second, recognising different knowledge claims in policy deliberation requires equal scrutiny of these claims. While scientific knowledge must not be treated as a privileged argument, local knowledge must not be romanticised either. In other words, considering local knowledge in policy deliberations does not mean it should be treated as preferred knowledge, as some policy scholars do (e.g. Nugroho, Carden & Antlov, 2018; Delvaux

& Schoenaers, 2012; Yanow, 2003). A key component lies in the importance of having a public forum where these claims can be evaluated. The achievement of any form of knowledge in policy deliberation is not only related to the logic of the knowledge itself, but it is also involved with attributes of the speaker and an emotional expression attached in delivering the knowledge. Shaping public policy does not just require 'speaking truth to power' (Wildavsky 1979), but also finding strategic and pragmatic ways of 'speaking truth to the public'.

Finally, our article emphasises the importance of unpacking normative assumptions in policy analysis. This aspect of policy analysis is usually ignored, especially in the perspective of evidence-based policy studies (Newman, 2016; Peters & Zittoun, 2016). We illustrate that the main reason that local knowledge could influence public policy is that its normative assumptions fit well with the socio-cultural beliefs, such as the positive thought in self-reliance and mutual support among laypeople. Alongside this, many policy scholars propose different ways of conceptualising policy knowledge from this study. The critique is that those conceptualisations are not sensitive enough to the capture of the normative component of policy making. For example, Freeman & Sturdy (2015) propose that types of knowledge for policy can be inscribed in documents and instruments, embodied in people or enacted in particular circumstances. Also, Dunn (2018) perceives different forms of policy knowledge as designative, evaluative or advocative. Designative knowledge is for explaining the process, while evaluative knowledge is for explaining the outcomes. As for advocative knowledge, it is for guiding actions. Both Freeman & Sturdy (2015) and Dunn's (2018) classifications, however, include only knowledge that can be justified by empirical evidence. This study, thus, confirms the significance of the conventional classification that differentiates expert knowledge from local knowledge as both empirical and normative aspects are included explicitly in the analysis, which pave the way to the better understanding of the real policy world where knowledge with empirical justification is not the only form that determines a policy decision. As shown by the case, knowledge with normative justification can also shape public policy.

Conclusion

This article presented a case of policy deliberation on disaster coping strategies in Bangkok. It argues that while expert knowledge can deliver technical efficiency, it does not mean that such form of knowledge always influences policy. This is especially the case when the logic of scientific rationality fails to account for the context, norms, and social ideology in which the policy deliberations take place. This article also demonstrates the limits of expert knowledge when scientists are not trusted by the wider public and when they perform poorly in connecting with an emotionally distressed citizenry that just survived terrible flooding. In contrast, local knowledge can be influential in policy deliberation, even on technical matters like flood mitigation and wastewater management when their

arguments align well with social norms and ideologies, as well as public sentiments. This, however, does not mean that these two forms of knowledge run on parallel tracks. As our case study demonstrated, these contesting forms of knowledge can be bridged after a process of public deliberation and collective learning.

We recognise that our article may come across as overly sympathetic to local knowledge. We therefore conclude our article by providing a more nuanced account of this matter. In calling for the promotion of local knowledge in policy deliberation, we recognise that local knowledge does not always pave the way towards sound policy. It can be a weapon conservatives and populists use to maintain the status quo. It is therefore misleading to simply say one is in favour of advocating local knowledge. In this case, while EM cleaning solutions could have a positive social outcome by enhancing social cohesion and fostering mutual aid during the crisis, it might not be effective in dealing with polluted water at a large scale, as claimed by scientists, and may actually make environmental outcomes worse. With that in mind, we propose instead that the discussion should move beyond whether expert and local knowledge matter towards an attempt to include such different forms of knowledge in deliberative policy processes and to figure out the ways in which they could be contested or bridged.

It is crucial that policymakers take into account these reflections. Their challenge is to transform themselves into the next generation of policy analysts, ones that move beyond being mere technocrats, with their scientific and economic-analytical toolboxes, to become interpretive mediators and facilitators of deliberative processes who can promote the exchange of different forms of knowledge based on different modes of rationality and stimulate different knowledge partners to constructively contest, integrate or articulate their lifeworlds.

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Competing Interests

The authors have no competing interests to declare.

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