



Increasing flood risk awareness and warning readiness by participation – But who understands what under ‘participation’?

Alexander Fekete^{a,*}, Atif Bilal Aslam^b, Mariana Madruga de Brito^c, Iris Dominguez^d, Nishara Fernando^e, Christian J. Illing^f, Apil K KC^g, Farnaz Mahdavian^h, Celia Norf^a, Stephen Plattⁱ, Parana Ari Santi^j, Barbara Tempels^k

^a TH Köln (University of Applied Sciences), Institute of Rescue Engineering and Civil Protection, Germany

^b University of Engineering and Technology, Department of City and Regional Planning, Lahore, Pakistan

^c Helmholtz Centre for Environment Research, Germany

^d Pontifical Catholic University of Peru (PUCP), Department of Engineering, Peru

^e Department of Sociology, Faculty of Arts, University of Colombo, Sri Lanka

^f THW (German Federal Agency for Technical Relief), Headquarters – Research Unit, Germany

^g Institute of Engineering, Thapathali Campus, Tribhuvan University, Nepal

^h Karlsruhe Institute of Technology, Department of Economics and Management, Germany

ⁱ Centre for Risk Studies, University of Cambridge, UK

^j UGM (Universitas Gadjah Mada), Faculty of Geography, Indonesia

^k Wageningen University, Department of Environmental Sciences, Netherlands

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ABSTRACT

Participation is an often-demanded process in disaster risk reduction (DRR). However, it is often unclear who understands what under this term. International organizations such as the United Nations have promoted participation in their DRR strategies since the 1980s, but further research is needed on its opportunities and limitations. Here we highlight what is understood by participation according to different actors and various international contexts. This study was motivated by a workshop where flood-risk and resilience experts from 14 countries perceived the nature of participation and the lack of its implementation differently. To unravel the multitude of these perspectives, 27 expert interviews were conducted in seven countries: Belgium, Germany, Indonesia, Iran, Nepal, Pakistan and Peru between March and August 2020. Results show that constraints on the conduction of participation are not only related to the specific country context but differ even within countries. Limitations such as capacities and willingness to participate as well as the role and importance of participation are common issues across the investigated contexts and countries.

1. Introduction and setting

In the context of disaster recovery, participation is promoted quite early on, for example by the United Nations for a range of activities including encouragement of local and affected communities to take action, also for financing, or reconstruction policies [1]. In the ‘Yokohama strategy’ from 1994, the United Nations claimed that “Preventive measures are most effective when they involve participation at all levels” [2]. Similarly, the ‘Hyogo Framework for Action’ from 2005 reiterates these messages [3], while the latest strategic document, the

‘Sendai Framework’ suggests participation for an even greater variety of activities [4]. Even though the European flood directive, enacted by the European Parliament in October 2007 and implemented on all EU territories, does not mention participation explicitly, it stresses that managing flood risks should be done at the community level. This underlines the general acceptance of participation as an important mean to foster effective disaster reduction and management by international institutions [5,6].

While public and stakeholder participation is regarded as important in Disaster Risk Reduction (DRR) and as a tool for successful Flood Risk

* Corresponding author.

E-mail addresses: alexander.fekete@th-koeln.de (A. Fekete), atif.aslam@uet.edu.pk (A.B. Aslam), mariana.brito@ufz.de (M.M. de Brito), idinguez@pucp.edu.pe (I. Dominguez), nishara.fernando@soc.cmb.ac.lk (N. Fernando), christian.illing@thw.de (C.J. Illing), apil@pcampus.edu.np (A.K. KC), farnaz.mahdavian@kit.edu (F. Mahdavian), celia.norf@freenet.de (C. Norf), paranaarisanti@gmail.com (P.A. Santi), barbara.tempels@wur.nl (B. Tempels).

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Management (FRM) [5,7], it is still rarely applied in a way that satisfies all relevant actors. Indeed, participation involves a considerable range of public and private stakeholders and measures [4,8,9] which have sometimes conflicting interests. Furthermore, while the genealogy of the term participation can be traced back over centuries [10], and is analyzed in some areas such as the development of the United Nations strategies in DRR [11], challenges still exist as actors interpret participation as well as its goals and measures differently. This can hinder its successful implementation in the eyes of all involved actors.

An additional constraint is that some authorities may be not ready to fully engage in participatory processes due to lack of awareness or knowledge, or do not see a great benefit in conducting participatory approaches. In addition, in contexts in which the national DRR strategy depends on external assistance (i.e. non-governmental organizations or cooperation agencies), authorities may face confusing or even incoherent frameworks for action, which diminishes participatory processes rather than enhancing them. Therefore, unravelling these often-hidden constraints can help direct and initiate future participatory FRM approaches more successfully.

Considering the aforementioned gaps, this article investigates participative processes in different international contexts to identify different notions of participation. More specifically, we aim to understand how participation is framed, what are common participation methods and what are the perceived obstacles and advantages. Since this is a wide topic, this article focuses on the perception of authorities and experts responsible for initiating FRM processes. Furthermore, it compares the findings of the prevalence of participation processes within different national contexts and their success from the perspectives of the authorities.

The article analyses cases with distinct cultural settings and countries aiming to gain insights of specific drivers and causes of participation. Cultural and political grid and structure [12] heavily dominate the depth of participatory processes. Hence, it is crucial to understand how authorities in the often quite hierarchical field of FRM deal with informing and involving the public in a comprehensive way. This is important to sensitize reporting to international bodies, for example, within the current Sendai Framework or the Sustainable Development Goals (SDGs) when comparing different countries. Therefore, this article deepens the analysis of existing research on how participation is differently understood by various actors.

2. Conceptual background and key questions addressed

Based on the literature, the conceptual background for the study design is developed. The main approach of this article is explorative, inductive and empirical. Therefore, this conceptual background aims to inform readers about some basic components of participation. Still, it cannot serve as a state-of-the-art review since this goes beyond the ambition of this article.

Participation is widely acknowledged as a necessary component of effective, efficient, and inclusive DRR [13–15]. For instance, the Sendai Framework (2015) points out that DRR needs to strengthen disaster risk governance, coordination across institutions and sectors and “participation of relevant stakeholders”. At the same time, it includes as one of the guiding principles of DRR the ‘inclusive, accessible and non-discriminatory participation’ of all. It also highlights complementary forms of participation, pointing out to the need for the commitment of the whole society as well as the action of certain stakeholders at specific levels.

Plenty of scientists and organizations encourage participation in FRM [16–18], for example to achieve consensus, better justification [19], or legitimization [20]. Participation is also deemed relevant in risk and vulnerability assessments as the participation of potentially vulnerable populations is crucial if these assessments are to be useful for decision-makers [7]. Participatory governance is even regarded as a trait of the paradigm shift from flood protection to FRM [5,6].

Participation processes are found important in many areas of human dialogue, not restricted to DRR. Since many conceptual notions of participation in DRR and FRM are based upon those, this study also acknowledges them and integrates some of their key components into the study design. In the following sections we discuss some of these notions and point out the questions that were addressed in our study.

2.1. Participation dimensions and principles

Participation is about interaction, involvement, and communication between people. It can be related to planning in politics, which can be conducted either as “an instrument of central guidance, coordination, and control by the state”, or “it be divided among a large number of relatively autonomous actors working on narrowly defined problems” [21]. Or it can be achieved by combining both, as “synoptic central planning and a decentralized planning that involves mutual partisan adjustments among actors” [21]. Key aspects of interaction are also put into hierarchies of a certain maturity. An example is the so-called ‘ladder of participation’ [22], which reflects notions of the power structure that influences communication [9].

Participation involves different notions of one- or two way communication, and degrees of empowerment [23,24]. Highly empowered public participation can ensure higher accountability, transparency, and predictability of governing agencies [25]. The principles of inclusion, dialogue and deliberation [26] form the basic common grounds for effective participation [27]. Other principles include “direct learning from local people, offsetting biases, optimizing tradeoffs, triangulating, and seeking diversity” as well as “facilitating analysis by local people, practicing critical self-awareness and responsibility, and sharing” [28].

Such notions and principles of the importance of public participation are found in many fields, not limited to DRR, such as Management Theory, Collaborative Learning, Decision Analysis, Procedural Justice, Theories of Democracy and Evaluation [29].

2.2. Participation methods

The methods used for public participation include, for example, citizen juries, citizen panels, internet conferencing, advisory boards, quality councils, scenario workshops, informal roundtables, living room meetings, deliberative opinion polls, visioning conferences [28,29]. In DRR, specific methods also exist. Nevertheless, they often exhibit general characteristics of methods used in other fields such as the Participatory Rural Appraisal – PRA [30]. PRA includes tools such as “participatory mapping and modeling, transect walks, matrix scoring, seasonal calendars, trend and change analysis, well-being and wealth ranking and grouping, and analytical diagramming, all undertaken by local people” [28].

Besides the PRA methods, other tools can also be used. An example is Participatory Geographic Information Systems – PGIS [31], that seize a recent interest and development, for example, in a field named Volunteered Geographic Information - VGI [32]. Other example consists of participatory modelling approaches [6], which include stakeholders in all steps of the modelling process aiming to empower them. Methods are related to the principles and dimensions of participation (see 2.1). For instance, the stage of involvement of local stakeholders in a given method also reflects whether they are just regarded as data sources or more [33].

Here, we do not focus on specific participatory methods but on the general means of communication (Q3) and how successful these strategies were (Q4), since it would require an equal representation of all methods, which exceeds the scope of this article.

2.3. Participation gaps

Several studies consider lack of participation as the main gap that may result in “frustration, and increased inequalities” in FRM [9]. Other

gaps also persist despite the broad range of participatory methods available. For example, to set basic pre-conditions for public participation, including the willingness to participate [34]. While principles and methods for providing feedback long exist [19,35], the importance in providing an opportunity for feedback seems to persist as a gap in FRM [36]. As a result, satisfaction surveys among stakeholders of participation actions are still rather rare in FRM [36,37].

As another prerequisite for public participation, information and awareness about the context is crucial [38]. In FRM, a persistent gap is risk perception, which is related to awareness and information [39]. There is a paradigm shift from planning being not just a technical process but also involving decision making, social processes and perceptions [40] as well as the interests of affected populations [41]. Gaps and constraints of participatory approaches are mentioned within community-based disaster mitigation, too [42]. Long processes with laborious discussions and approvals however justify better results, avoiding overlooking local needs and “conflicting interests and objectives within the community” (ibid.).

Regarding different cultural contexts, it is important to be aware of cultural differences in FRM [12,19,43] and to recognize that theories developed in ‘the west’ cannot necessarily be applied on the ground of ‘the east’ [44]. Hence, context-based conditions need to be considered such as whether societies are more inclusive and open and possess an effective governance that enables public participation [45]. Similarly, planning cultures and urban contexts are of special interest, since underlying patterns of budget expenditure and basic infrastructure demands may influence public participation processes [25]. The public might not be aware or informed about such internal processes, or not be interested. Summarizing the array of possible gaps, these can be structured into structural, conceptual or cultural gaps (ibid.).

2.4. Summary and key questions

Summarizing the findings above, Table 1 lists key components identified in literature, additional related aspects or references, and how they were addressed by our study. These were used to inform the design of the questionnaire for expert interviews applied in this study.

3. Research design

This article is motivated by a joint international expert workshop in Cologne, Germany Oct. 2019, funded by the German Academic Exchange Service (DAAD). During the workshop, an excursion was carried out to the Emscherogenossenschaft, a German water body authority with the mandate of FRM, river restoration and wastewater drainage of the Emscher catchment. It was illuminating how differently the experts from over 14 different countries from Africa, Asia, Europe and Latin America perceived the role of community participation and how they expected it to be implemented in this German case. This experience inspired this investigation, aiming to understand how participation might be interpreted differently in distinct contexts and cultures. Reflecting on the excursion afterward revealed, for instance, how the invited experts interpreted the statements of the Emscherogenossenschaft representatives. For example, it was assumed by some that the spokespersons may have hidden information intentionally or understood FRM as a top-down process, and did not take participation seriously. In this sense, both the workshop and excursion were a unique learning exercise in which reflection helped to understand the experts differing perceptions regarding participation.

By analyzing what is understood by the term participation, the study also investigates additional aspects. These include identifying the constraints limiting the implementation of participation, the internal and external limitations on its effectiveness, skepticism and lip-service amongst practitioners, and downsides of participation that often are overlooked or are not expressed openly by those charged with implementing participation. It also aims to better understand possible biases

Table 1
Proposed framework used for informing the design of the study.

Component	Guiding references	Additional aspects or references	Key question(s) for the questionnaire
Communication type and level, maturity	„Ladder of participation” [52] (a) manipulation (b) therapy (c) informing (d) consultation (e) placation (f) partnership (g) delegated power (h) citizen control [22]	(a) informing (b) consulting (c) involving (d) empowering [14,15,51] a) Inclusion b) Dialogue c) Deliberation [22] a) can b) like c) enabled d) asked e) responsive [34]	Q1: What do you understand by the term participation? Q2: Which level/s of participation do you think is/ are important and feasible in your organizational/ local context concerning flood risk?
Methods of participation	a) consumerist methods b) traditional methods c) forums d) consultative innovations e) deliberative innovations [34]	Conferences, meetings, panels, workshops [29] Mapping, modeling, transect walks, matrix scoring, seasonal calendars, trend and change analysis, well-being, wealth ranking and grouping, analytical diagramming [30] Participatory modelling [6]	Q3: Which methods of establishing participation processes have you observed in your institution in relation to flood risk? Q4: Have these methods been successful? If yes or no, why?
Gaps	a) Structural gaps b) Conceptual gaps c) Cultural gaps [25]	Responsiveness, ensuring feedback [34], satisfaction [37] Information, awareness, preparedness [38] Engagement willingness and capacities [34] Local needs, different conditions and objectives [42]	Responsiveness Q5: How important is it for your organization that people (citizens or colleagues) are satisfied with the decisions or measures taken? Awareness and preparedness Q6: Do you think participation can improve your target communities’ awareness of flood risk and level of preparedness? If yes how and if no why? Skills and commitment Q7: How willing is your community or organization to engage in participation? Different contexts Q8: Does your community or organization possess sufficient capacity to engage in participation? If no; which other

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Table 1 (continued)

Component	Guiding references	Additional aspects or references	Key question(s) for the questionnaire
			stakeholders might increase the capacity?

in research involving interviews with experts from different cultural backgrounds. Finally, this is an initial exploratory study intended to prepare for future investigations of people’s expectations of and desire for greater participation in flood-prone communities.

This article was unable to encompass the full range of potential stakeholders or the full range of participation methods. It focuses on experts and authorities responsible for initiating and carrying out FRM planning in distinct catchments in seven countries (i.e. Belgium, Germany, Indonesia, Iran, Nepal, Pakistan and Peru).

The experts to be interviewed were identified through personal contacts. They are defined as private or public stakeholders from governmental institutions and citizen initiatives as well as researchers with a background in FRM. For each case study, at least one expert was selected. A standardized questionnaire based on the proposed framework of Table 1 was used to capture their opinions. The authors jointly composed this set of questions in a series of iterations. The interviews were conducted between March 5th to Sept 8th, 2020. Due to the developing Covid-19 pandemic, many interviews were conducted by email. Those that were conducted by virtually or in-person have been transcribed. No limits of continent or country in the choice of the study area were set since the overall purpose was to elucidate heterogeneity in responses and learn from the differences.

4. Results from interviews on participation

A total of 27 interviews were collected from experts in different roles and FRM organizations working in 7 countries (Table 2). The interviewees (Tables 3 and 4) range between 30 and 65 in age, have experience of 2–34 years in FRM and around two third have direct flood experiences either through work or as a private person.

Interview responses are summarized and detailed here only for cases where they differ from what it is expected or from the other cases. This means that for some countries, details vary in length, which does not mean there were no replies or they are less important. However, the representation here is kept short and to the most relevant findings. It is important to highlight that due to the small sample sizes, semi-quantitative interpretations are not possible. Therefore, the summary tables serve mainly to help compare differences in responses in a descriptive sense.

Regarding the Q1 “What do you understand by the term participation?”, responses show that perspectives vary; even among respondents of the same country. Responses range from a passive to an active understanding of the term as summarized in Table 5.

In Belgium, all respondents understand participation as the involvement of or collaboration with people that have (direct or indirect) interest in a project or a common goal. All referred to the ladder of participation, going beyond the lower ranks (consult, inform) with co-creation as the highest form. Three types were referred to: internal participation (between different offices of the organization), stakeholder participation (NGOs, other governmental organizations and citizens) and political participation (with political representatives). The importance of allowing people to provide input was emphasized, even though they might not follow it, as well as of building trust, being open and transparent.

A German respondent pointed out at the need for different methods when targeting distinct stakeholder groups in decision-making processes. Another respondent stressed the need for inclusion from the

Table 2

Overview of stakeholders interviewed and key characteristics.

Stakeholder	Country	Role of the organization	Number and type of interviews
Department Environment (Flanders) (B1), Flemish Environmental Agency (B2) Provincial government (B3)	Belgium	Regional government, Supralocal government	3 (video conference)
Emschergerossenschaft/ Lippeverband (G1), Civilian Initiative Flood Risk Management, Cologne, Rodenkirchen (G2)	Germany	Authority, organization, Citizen NGO	2 (Email)
Copernicus Institute of Sustainable Development, Utrecht University (IN1), Universitas Gadjah Mada (IN2, IN3), Regional Development Planning Board of Special Capital Region of Jakarta (IN4), DKI Jakarta Regional Disaster Management Agency (IN5)	Indonesia	Researcher, Public sector organization, Disaster Management authority	5 (in-person interview and Email)
Iran Red Cross for Sistan and Baluchestan Province (I1), Ministry of Agriculture (I2), Jihad Ministry of Health (I3), Consultants (I4, I7), Iranian National Committee on Large Dams (I5), Special Committee on Flood assessment (I6)	Iran	Authority, organization, Emergency operations center, Rescue and relief	7 (Email)
Nepal Government, People of Gaur, Ministry of Infrastructure Development (N1)	Nepal	Public Infrastructure Organization related to the Dam and Road construction	1 (Email)
Capital Development Authority (Pk1), Federal Flood Commission (Pk2), Punjab Emergency Service (Pk3), Water and Sanitation Agency, Rawalpindi (Pk4), Provincial Disaster Management Authority, Punjab (Pk5) University of Engineering and Technology, Lahore (Pk6)	Pakistan	Public sector organizations, Emergency service, Disaster Management Authority, Academia/Research	6 (Email)
Municipality of the District Lurigancho-Chosica (P1, P2 and P3)	Peru	Authority, local government	3 (in-person interview)

beginning into such decision-making processes. A current lack of a legal basis for such involvement would call for such legislation adaptations to be made. But he also mentioned that participation also incurs a liability for responsibilities.

In Indonesia, all respondents understand that participation is an important process that involves many actors in a project or decision making and that participation should be targeted and strategically based on societal needs and problem solving.

Similar to Indonesia, in Iran, most of the respondents defined participation as a collaboration of stakeholders, decision-makers, and FRM organizations and NGOs in managing the flood and informing people in flood-prone areas. Two respondents included societal volunteer involvement in participation.

From Nepal, it was stated that participation in disaster resilience is related to the issues of livelihood. Most of the resilience programs are not a one-time investment but rather a continuous effort. Hence, linking the design of the project with livelihoods is important.

In Pakistan, various terms were used for participation, including

Table 3
Profiles of interviewees.

Country	Age	Years of work in that organization	Years of work on FRM	Female/Male	Experience with floods
Belgium	^a , 42, 45	4, 14, 18	4, 14, 18	1/2	0
Germany	54, 75	25, 26	18, 26	0/2	2
Indonesia	30, 31, 35, 40, 47	1, 3, 7, 9, 10	8, 3, 9, 7, 10	3/2	5
Iran	30, 60, 34, 65, 69, 54, 47	12, 23, 5, -, 35, 27, 3	12, 23, 11, 34, 20, 10, 3	0/7	7
Nepal	51	18	3	0/1	1
Pakistan	40–44	3–14	2–10	1/5	1
Peru	41, 44, 52	6, 1, <1	6, 30, 2	1/2	2

^a One of the Belgian interviewees refused to declare their age and one Iranian interviewees their years of work in the organization.

Table 4
Roles of interviewees.

Country	Role in the organization
Belgium	B1: Project coordinator B2: Program manager B3: Project coordinator
Germany	G1: Leader Hydrology & Hydraulics; G2: Neighborhood assistance, communal consultation
Indonesia	IN1: Researcher in water and climate governance in deltas IN2: Researcher in ecosystem-based disaster management IN3: Researcher in disaster management IN4: Sub-division manager at Regional Development Planning Board of Special Capital Region of Jakarta IN5: Head of Section for Community and Institutional Empowerment of DKI Jakarta Regional Disaster Management Agency
Iran	I1: Member of the rescue/relief team, red cross instructor and trainer I2: Presidential task committee. I3: Documenting, providing report, and informing about flood events I4: Member of national risk management, Flood management I5: Flood frequency analysis, hydrologist, technical committee, head of water resources section I6: Head of the specialized Flood Assessment and Large Dam Committee I7: Flood assessment, flood maps and flood reports
Nepal	N1: Designing structural and non- structural measures for FRM
Pakistan	Pk1: Deputy Director (Land-use Planning) Pk2: National flood protection planning Pk3: Preparedness, mitigation and response Pk4: Rainwater drainage and sanitation Pk5: GIS Team Lead and MHVRA Specialist Pk6: Assistant Professor and Principal Investigator
Peru	P1: Manager of Public Works P2: Sub-manager of Civil Protection P3: Risk Assessor

‘opinion, obligation, inclusion, involvement, training and consultation’. One respondent saw active participation as an organization led activity while another respondent had an understanding of participation as ‘involvement’ only. Two respondents perceived participation as a passive activity with no role of stakeholders in decision making while four respondents perceived it actively with a decision-making role of stakeholders from the beginning and based on a legal framework.

In Peru, the respondents understand participation as involvement of the community in the municipality’s efforts to meet the expectations and needs of the people according to rules and norms.

When considering all countries, it is interesting to observe a convergence with common notions of the way participation should be conducted ideally. Multi-stakeholder dialogue and involvement is stressed, for example. But also, voices balancing the common way of following top-down processes are expressed, as well as those

Table 5
Summary of key responses to Q1 – “What do you understand by the term participation?”

Selected key response	Country	Interpretation
Participation provides people opportunities to produce input even though they might not follow that input	Belgium	Enable opinion even when not consequently following it
Collaboration of multiple stakeholders in managing and informing	Germany, also in parts of Iran and Indonesia	Multi-directional action and communication; including many stakeholders
Participation should be based on societal needs and problem solving	Indonesia Nepal	Needs- and context-based, bottom-up
Importance of linking the design of a resilience program with the livelihoods		
Involvement of people in efforts to meet expectations and needs according to rules and norms	Peru Germany	Rule- and norm-based, aligning with top-down processes, too
Enabling new laws that permit involvement		
Different understandings of participation even within one country emerge; participation as a passive or active involvement task. Both participation with no involvement or involvement of decision makers from the beginning	Pakistan, also in parts; Belgium	Multiple ways; bottom-up or top-down; including many or few stakeholders

emphasizing bottom-up approaches. The limited selection of only 7 country contexts already captures common notions as well as typical divergent views. Since following top-down rules and norms have to be considered as well as local contexts of needs and problem solutions possible. There is also an awareness that the call for involvement by individuals does not automatically mean that those might follow the expression of interest themselves.

Responses to Q2 “Which level/s of participation do you think is/are important and feasible in your organizational/local context concerning flood risk?” show that in 4 countries there was a consensus that it was important and feasible to consider the highest level of participation – partnership, and that it should include all other aspects of participation, from communication to empowerment. In Iran, 5 out of 7 respondents also thought this level of participation was possible. In Pakistan, the majority (5 out of 6) thought a feasible level of participation would be consultation and information sharing and only 2 out of 6 thought partnership might be possible. No-one in Pakistan thought empowerment was feasible. The results show that the first option, ‘Top-down communication’ is selected less in all countries. High agreement was observed for almost all categories.

‘Other’ types of participation are indicated in the detailed open responses. In Indonesia, the declarations about the level of participation varied, depending on the research design. Interactive info markets and ad-hoc participation opportunities on public events were mentioned in Belgium, and horizontal communication in Germany. One-by-one, collective, and *trans*-organizational and transnational participation were mentioned in Iran. In Peru, meetings of all municipality managers once a week were mentioned, in which participants discuss prevention and risk reduction.

Responses to Q3 “Which methods of establishing participation processes have you observed in your institution in relation to flood risk?” show that the most popular methods of participation are ‘Printed publications’ and ‘Internal meetings’, followed by ‘Public meetings/forum’ and ‘Feedback/complaints processes. Surprisingly, given their popularity, ‘Social media’ and ‘Email’ are less common forms of participatory communication concerning flood risk. There is more

heterogeneity of usage with ‘Emails’, ‘Social media’, ‘Public hearings, discussion forum’ or ‘Feedback/complaints’, especially respondents from Iran and Pakistan mention this in fewer numbers than from Belgium. In Peru, emails are not selected as a method or means of establishing participation processes, because WhatsApp is preferred as faster and more effective. As well as in Indonesia, emails are found to be less efficient and only be used for formal invitations for a discussion forum. This may become a trend in other places too. In Indonesia, social media is widely used and different application platforms for disaster risk management and community engagement exist. In schools, a disaster management curriculum using students’ story-telling methods is set up. ‘Other’ types of participation methods include co-creation in Belgium, flat hierarchies in Germany, and printed publications, social networks and training in Iran and Pakistan. In Peru, a form of public meeting is used called ‘working tables’, i.e. public meetings around a table for discussion and negotiation in different parts of the district to gather people where they live.

Additional information for Q3 was derived in Q4 “Have these methods been successful? If yes or no, why?”. Table 6 summarizes selected key responses and key points for further interpretation.

A Belgian interviewee mentioned that although social and digital media are relevant, physical meetings are more valuable as participants feel that they are part of a bigger whole and they contribute to the actual decisions. However, getting people to attend these meetings is challenging. A second Belgian respondent indicated that for this reason, they combine specifically organized participation with events where people gather anyway (e.g. markets, local fairs). This way they can reach a wider and more varied group. One respondent indicated that digital media can be instrumental in improving attendance, although letters signed by local officials or - as mentioned by another respondent - a printed newsletter published by the municipality were found to have a bigger impact. Online media (especially websites), but also publications and newsletters are found to be useful for information dissemination, to reach bigger audiences. Websites are experienced as an (inter)active platform, while interaction for publications and newsletters is limited. Direct communication by email is used for small groups of representatives that are actively involved. An interviewee said that these media are effective in creating public support, but the success of these participatory projects still needs to be proven because not many truly participatory projects have been realized yet.

A German interviewee responded: “communicate before the event but do not expect any feedback or interaction, it is worth pushing participation during and after the event“. Another interviewee argued that, in his experience, when in one case effective results were achieved

based on new and horizontal communication, they were not adopted in the regular routines or protocols of public officials and thus in another case participation had to start from the beginning, especially if other departments were involved.

In Indonesia, the success of each method depends on society’s characteristics. For example, in urban areas, discussion forums are less effective because of the low willingness of urban society to engage. Rather, social media is found to be more efficient to have community participation. Meanwhile, on the outskirts of urban society, discussion forum methods are more useful. Story-telling in schools is found to engage students as they can share their experiences and feedback about FRM not only to their peers but also to the authority.

In Iran and Indonesia, being present in the flooding area plays a key role in FRM, especially when the authority conducts a forum directly in the affected community and visits the flood-impacted area, since it creates a feeling of the government being present in times of adversity.

In Pakistan, two respondents said attempts at participation had limited success because of the lack of modern tools and process enabling techniques. ‘Printed publications’ were successful in disseminating important information including hazard maps and guidelines for safety measures to be adopted during flooding events and staff contact details for assistance during emergencies. ‘Email’ is successful in getting immediate replies and disseminate vital information quickly. Internal meetings are successful for detailed discussions, taking right decisions on an immediate basis and keeping a check on the timeframe for task completion. ‘Social media’ are seen as successful in disseminating hazard information outside working hours to remote areas inaccessible to officials/stakeholders. ‘Public hearing’ has been regarded as successful only for the planning phase, but not during implementation. And the method of feedback/complaints is seen as successful in providing an opportunity to overcome the shortcomings.

In Peru, the aforementioned methods are considered ‘successful’, especially the use of social media (such as WhatsApp) and the ‘working tables’, because people expect information, attention and action as soon as possible.

The advantages and limitations of physical versus digital forms of communication are a matter in all countries. There is an agreement that digital forms (e.g. social media, internet) can reach wider and different audiences. Still, the lack of technical means can impair the usage of digital form of communication. Furthermore, digital communication raises expectations on the speed of communication. Physical presence and interaction might not only get different groups of people engaged, they may also allow capturing a more holistic context. However, Indonesia’s example shows that contexts may vary, even within urban and sub-urban contexts. It is remarkable that while communication is regarded as important, it is also a matter of how communication works in reality. Reasons for the lack of feedback can be multifold, but it can impair motivation for engaging in more participatory activities. Organizing and preserving knowledge and communication as knowledge management is key for better information sharing and ownership. This includes awareness of the importance of mutual information and inclusion, as when responsible persons leave their job and take knowledge with them or responsible departments change.

Responses to Q5 “How important is it for your organization that people (citizens or colleagues) are satisfied with the decisions or measures taken?” are summarized in Table 7.

All Belgian respondents indicate that it is important or very important that people are satisfied with the decisions taken. One interviewee stated that without the involvement of citizens they cannot carry out the measures. Another indicated that it is their duty as public officials to serve the common interest, meaning that “as many people as possible are as satisfied as possible with your decisions“. Two respondents indicated that participation generates more support for solutions and their implementation. One respondent indicated that despite its importance it does not necessarily mean that a participatory approach is always taken, especially when it comes to internal participation (within the

Table 6

Summary of key responses to Q4 – “Have these methods been successful? If yes or no, why?”

Selected key response	Country	Interpretation
Importance of physical, not only digital meetings	Belgium	Better feeling of the ‘bigger whole’ by physical meetings
Lower willingness in urban areas to physically participate than in sub-urban areas	Indonesia	Urban- sub-urban differences
Showing presence in the area increases success	Iran and Indonesia	Showing presence
Digital communication reaching wider and different audiences	Belgium	Digital distribution
Lack of modern tools and access hinders the participatory processes	Pakistan	Digital gap
People expect information, attention and action as soon as possible	Peru	Speed of communication
Lack of feedback. Inclusion of results in administrative processes often lost. Missing knowledge management and preservation when processes are tied to individual responsible persons	Germany	Knowledge inclusion processes – also over expectations

Table 7
Summary of key responses to Q5 – “How important is it for your organization that people are satisfied with the decisions or measures taken?”

Selected key response	Country
Satisfaction as a precondition for implementation of measures	Belgium
Acceptance as one form of consent increases ownership	Indonesia
Serving the people	Belgium, Germany, Peru
Difficulty in understanding what the people want.	Iran
Inclusion of people’s opinions dependent on organization’s resources	Pakistan
Satisfaction increases the motivation of young professionals	Peru

organization). Participation between governmental organizations is mentioned to be mainly based on combining common goals. Sometimes satisfaction of other governmental actors is more important than for citizens, as they need to formally approve plans and contribute to their execution.

A German interviewee responded that “It is very important because the citizens are the people we are working for”. Another German interviewee stated that it is “very important”, but argues that “satisfied” may not be the right word, because the “acceptance” of decisions and activities is based on the amount of participation and whether people believe they are being taken seriously.

The Indonesian interviewees agree on the importance of people’s satisfaction with the measures taken. One interviewee answered that it is crucial to have legitimate acceptance by the targeted society, even though it is impossible to satisfy all stakeholders most of the time. The higher the people’s acceptance of an FRM related decision, the higher their sense of ownership to the program for a more sustainable result.

Iranian interviewees mostly agreed that citizen satisfaction is very important, however, one respondent said it was difficult to understand what people want but eventually they learned how to improve the process. Another said that, although it is important, normally people are not involved, moreover, people don’t have technical knowledge regarding FRM, therefore it is not necessary to consider their opinions.

Responses from Pakistan range from least important to very important. The representative of a development authority responsible for land use planning regarded people’s satisfaction as the least important as they have to execute decisions according to top-down development planning policy. Another respondent, however regarded it as important and stated that people’s opinions may not be given much weight as organizations are limited by the available resources. Another mentioned people’s satisfaction as ‘very important’ but linked it with water and sanitation billing since dissatisfied people failed to pay utility bills on time. Another regarded it as important for the project implementation phase.

In Peru, the interviewees agreed that satisfaction is important, because ‘actions are for the people’. If they are satisfied, it means ‘we are on the right track’. Further, if locals are satisfied, the motivation of colleagues, in particular of the young professionals, is high and thus they are also satisfied.

Interpreting the findings from all countries, participation seems highly aligned with the people’s satisfaction, mainly of those served. It is seen as a precondition for acceptance of measures to be taken, such as a FRM activity or plan. Acceptance, maybe a form of satisfaction, also leads to higher ownership. Measures and actions are often regarded by officials as serving the people and as self-evident. However, some difficulties are also mentioned such as understanding what the affected population exactly wants. And participation can also be dependent on resources available to enable such processes. In the end, it also creates motivation for those in charge of FRM when the people they serve are satisfied.

Responses to Q6 “Do you think participation can improve your target communities’ awareness of flood risk and level of

preparedness? If yes how and if no why?” largely agreed on the importance of participation in increasing awareness, with one interesting deviation (Table 8).

All Belgian respondents believe that participation can improve both awareness and preparedness, as it confronts people with the flood risk and invites them to think about it. In fact, for one respondent, improving awareness was a reason to start participatory processes. Informing people of flood risks, especially when they buy or rent a house, is seen as an important task. Sharing information during a concrete project or after a flood is considered more effective than general information dissemination. A challenge, however, is that awareness and preparedness decline after the end of participatory projects, and that it may take another 10 or 30 years for the next flood to happen. In this case, one respondent indicated that it might be more efficient to invest in the preparedness of emergency services so that they are ready to mobilize citizens when a flood occurs, rather than investing in maintaining citizen preparedness. In areas where floods occur more frequently, neighborhood networks can play an active role in awareness-raising.

A German interviewee responded: “Yes, but there has to be a willingness – citizens first have to recognize that there is a risk and that they can do something on their own.” Another interviewee said that participation is the only successful way for both goals, but it is only possible if a classical top-down principle is not applied. Moreover, it should be recognized that participation-based measures lead to regionally differentiated solutions. In unclear and uncontrollable crises they often are the only options. There is some resistance to participation because, from a public authority perspective, it can be perceived as a loss of competence, control and authority. “This is, however, just a practical excuse and difficult to disprove”.

One respondent from Indonesia said that “If the initiative comes from them, it is more efficient to implement the program”. Another respondent related awareness also to maintenance: “When a certain infrastructure is developed in the neighbourhood, it is expected that by actively involving the community, it will also create a sense of ownership and the awareness to maintain it properly”.

All Iranian respondents stated that it would surely improve awareness. A participant said “if anyone thinks it won’t help, they should be removed from the office”. Another said that, through participation, knowledge can be shared between authorities and society, which could reduce the risk and improve societal actions during floods.

Only one respondent in Pakistan thought that people’s participation is of no importance (maybe within their organizational functioning). For her, enforcing land-use planning decisions does not need the

Table 8
Summary of key responses to Q6 – “Do you think participation can improve your target communities’ awareness of flood risk and level of preparedness?”

Selected key response	Country	Interpretation
General consent on the link between participation, awareness and preparedness.	Indonesia, Iran, Pakistan, Peru	General consent
Awareness also is created for preparedness and maintenance of infrastructure	Indonesia	Synergies for other topics
No need for participation in context of certain land use planning decisions	Pakistan	Limited necessity
Participation confronts people with the topic and thereby inspires them to think about it. But interest is related to frequency of occurrence of a hazard event	Belgium	Awareness related to confrontation
In addition, a willingness of the people is important. Participation can, however, also be regarded as a loss of competence from a public authority perspective.	Germany	Willingness and fears of showing loss of authority

community’s participation. All other respondents agreed that the community’s participation is very important for improving awareness and preparedness, to advise people not to settle in floodplains, to train in timely evacuation, to increase the outreach and effectiveness of flood defense initiatives, to better govern places during emergencies, and to discourage people from throwing garbage into channels or drains.

In Peru, the municipality officials agreed that participation improves awareness and preparedness. If people are informed and involved, they organize themselves and engage in ‘community labor’, e.g. they build flood protection structures (‘Community labor’ has deep roots in the aboriginal culture of Peru, where it is called ‘minka’).

Overall, there is a consensus on the importance of participation in enhancing awareness and preparedness. It is also considered beneficial for the maintenance of infrastructure and therefore creates synergies to other fields. However, there is also a single deviating voice. For example, some skepticism is found on the necessity of participation in land-use planning, with overarching normative regulations. Confrontation with the topic is created by participation and beneficial for generating interest, but it is bound to the length of this process, or hazard occurrence. Finally, participation only works when there is a willingness to participate. Engaging in participation can also be seen as a loss of authority from the perspective of public authorities, by giving away competencies or indicating a lack of competency.

Responses to Q7 “How willing is your community or organization to engage in participation? (either citizens or colleagues from own or other organization)” are summarized in Table 9.

In Belgium, following some successful experiences in FRM, the willingness to engage in participation is high and in some organizations, it has become a standard practice. There are however differences in the extent and character (active/passive) of how participation is used. The willingness of citizens to participate varies strongly. Factors that positively influence this willingness are the presence of a community/networks or strong advocates in the community and the attitude of the municipal government towards involving citizens. Potential reasons for some of the experienced difficulties to engage people are participation fatigue and the lack of recent floods. Furthermore, they might be demotivated by the responsibilities that it entails, since citizens are expected to protect themselves against flooding.

One German interviewee argued that the willingness of citizens to participate might also be low because many of them have experienced in the past either that they just had an advisory role without much

influence on the outcomes or that they were included so late in the process that their opinions could not be considered anymore.

Indonesian respondents had a mostly positive experience. However, one challenge is that urban people are very individualistic, and that participation is usually limited to providing information (i.e. consulting).

Although most respondents in Iran said they are willing to engage in participation, the lack of knowledge for those who want to participate is deemed as a barrier.

In Pakistan, two respondents reported that often the monetary gain is the motive behind the community’s participation. People make permanent settlements in floodplains and vulnerable locations so that they can get compensation in a post-flood phase for an often over-reported property damage. In absence of any financial benefit, people are reluctant to participate. Another respondent mentioned that the community is willing to participate, but the respondent’s organization lacks the appropriate forums and capacity to mobilize the community effectively, particularly in urban areas.

In Peru, willingness depends on the district zone, e.g. people in the periphery of Lurigancho-Chosica can be 80–90% willing to engage in participation. According to a respondent, people there have a migration background from the Andes Region, where community labor is part of their culture. Another participant pointed out that people’s participation has risen since the municipality has set as requisite for municipal services that people engage in participation, for example, in agreeing to a risk inspection of their housing.

In summary, the willingness to participate seems to be related to activities pushing participation, but also resources, networks and positive experience with it such as the feeling of having a real impact on the final decision. Predefined rules and legal backgrounds can also raise the willingness of a community, as well as cultural acquaintance with community activities, such as community labor. Monetary incentives, be it direct or indirect, can also raise the willingness. But there are also a number of demotivating factors, such as the personal responsibilities that arise with the process. Motivations also decrease when previous participatory experiences were not positive, be it due to lack of finding a role or saying. Individualistic communities such as in urban areas, can also hinder joint efforts and willingness, as well as a lack of knowledge about the topic.

Responses to Q8. “Does your community or organization possess sufficient capacity to engage in participation? If no; which other stakeholders (e.g. NGOs) might increase this capacity?” varied across countries but also within the countries (Table 10).

All Belgian interviewees point to capacity limitations related to the time required for participation and the availability of staff since participation is labor-intensive. One interviewee indicated that his

Table 9
Summary of key responses to Q7 – “How willing is your community or organization to engage in participation?”

Selected key response	Country	Interpretation
Successful experience or existing networks that already are active encourage more willingness	Belgium	Success and ties motivate
Demotivation by recognizing own responsibility for protection or participation fatigue		Fatigue and realization of own responsibility demotivate
Demotivation when experience showed low influence in the decision-making process	Germany	Experience can also be sobering
Willingness differs when only information is provided, and communities are rather individualistic	Indonesia	Information dissemination only can demotivate. Individualistic urban characteristics can demotivate
Cultural background of rural community labor can be a motivator.	Peru	Cultural background
Prescribed participation can also increase willingness		Regulatory basis
Lack of knowledge can be a barrier	Iran	Role of knowledge
Monetary benefits can be a source of motivation	Pakistan	Monetary incentives

Table 10
Summary of key responses to Q8 – “Does your community or organization possess sufficient capacity to engage in participation? If no; which other stakeholders might increase this capacity?”

Selected key response	Country	Interpretation
Time and personnel resources can limit the capacity	Belgium	Resource limitations compensated by other forms of participation
Light forms of participation or more cooperation can compensate it		
Lack of capacities leads to bottom-up actors’ engagement	Pakistan	Role of local governments and NGOs
Aging of participants and long time-spans after the last flood can limit participation	Germany	Aging and last hazard event
National media (TV and radio) has a significant role in this capacity building	Iran	Role of national media
Qualified personnel and budget necessary	Indonesia, Peru	Qualification of persons

organization does not have sufficient capacity but is aware that participation pays back in better implementation. Another interviewee indicated that capacity is never sufficient and has to be prioritized. A third interviewee, however, mentioned that their department is increasing the staff due to the demands of participation projects, but that this has its limits. Because of these limitations, organizations in Belgium are experimenting with 'light' forms of participation. A respondent said "we have to choose more strategically in which projects we invest strongly in participation". Potential gains can be made through a collaboration between governmental institutions. Another interviewee indicated that local governments should have the biggest capacity for participation since they are closer to the citizens, but that they currently do not, both in terms of availability and knowledge, especially in smaller municipalities. As for NGOs, two respondents replied that they do not have enough insights into their capacities and one said that NGOs already do a lot.

One German interviewee said that capacity is never sufficient and another said capacity has become insufficient over time since the civil initiative members are becoming old and gaining new members is difficult. Furthermore, no recent flood events have provoked a demand for flood protection. Nevertheless, there is a need for a long-term and publicly supported resilience/self-help capacity of citizens.

In Indonesia, different educational backgrounds in an interdisciplinary field can sometimes hinder the availability of specialist knowledge and capacities. A suitable educational background is a key "to explore what should be done in participation".

In Iran, respondents mentioned that the responsible agencies and organizations have different capacities, and the synergy of these capacities can be somewhat useful. Furthermore, national media (TV and radio) has a significant role in capacity building.

Only one respondent in Pakistan said that his organization possesses sufficient capacity to engage in participation processes. Three respondents mentioned that their organizations have insufficient capacity. One of them pointed to another government department, which may have better capacity because of its grass root governance setup. Another respondent described NGOs, faith-based organizations, local leaders, mosque clerics as important stakeholders. A final respondent mentioned that the Provincial Disaster Management Authorities may not have internal capacity but by coordinating with other departments, the capacity could be increased.

In Peru, a participant said that 'it can always be better', regarding the organizational capacity. She pointed out that the district has only one risk assessor, and that her team needs more qualified personnel to work in DRR. Furthermore, a second participant believes that the municipality budget for public works should be increased to provide more flood protection structures.

In general, possessing enough capacities to engage in participation can be a challenge, typically related to time and staff resources. This challenge can be compensated by shifting methods and responsibilities. In countries with lower financial resources, such gaps are sometimes compensated by NGOs, or left to local governments. While budget is an issue, qualification of people is another one, since those who are familiar with a hazard topic and with participation methods, may stimulate others to participate. Certain media such as national TV or radio can be an influential capacity. But capacity again is tied to the interest of people, and this can dry out when hazard events come of age, as well as the people engaged in a citizen NGO.

5. Discussion

The survey results are not representative and should not be mistaken as such, but they do illustrate the breadth of caveats as well as success factors typical for participation processes. Instead of affirming those findings that are well known, this discussion limits itself to carving out certain specifics. It may also include certain interpretations that differ from common findings, which is intended to shed new light on the field.

These appear not only from the respondent's replies but from the whole context of this study, embedded in a workshop and a field trip. This study was partly stimulated by a joint reflection discussion after a field visit where it became evident that expressions of open feedback, shrouded in irony, were partly misunderstood. This may be due to different cultural backgrounds not familiar with such humor. But it is important to consider in future studies, especially when researchers conduct interviews in foreign contexts. Therefore, the focus of this study lies in understanding better "who understands what under participation".

5.1. Findings on participation dimensions and principles

The heterogeneous responses in the expert interviews reveal that after decades of recognition of taking into account "victim's needs" and their capacities [46], the picture may be more differentiated than expected. It could be too easy to reject all approaches that are not ideally constructed as participatory, addressing all the 'principles of participation' in the right order as wrong per se. The responses of the interviews reveal reasons for not adopting the full representation of citizens in all cases, contexts and by all methods equally. While there may be good reasons to criticize this, it might also be helpful to reconsider the opposite.

For instance, whether all people want to participate, or, be responsible for it, is an open question for some respondents. This may contradict statements such as "Participation must be bottom-up" [29]. Furthermore, this may diverge not much between countries, but mainly between urban and rural settings. In the participation principles' literature, this geographic dimension should be considered. This implies that hierarchies of ideal participation or 'ladders' should be reanalyzed on whether their often normative order of ranking fit all contexts or rather, miss out on relevant dimensions such as the willingness of the people. It may also be the case, that "the people" are stereotyped as "the decision-makers", and false expectations are imposed. For example, the very illustrative response that some people might provide inputs, but not follow them themselves (Table 5). Or, that public authorities are always "the decision-makers". In our field trip, a water board member honestly discussed all pros and cons of participatory processes. In turn, many of our international group thought this board was also responsible for engaging and steering the participatory processes. However, this board itself is bound to laws and regulations and to the decisions of the authority above it. And when they tried participatory processes, they faced a low public response and willingness to participate, which in turn influenced future processes.

Similarly, some respondents claimed that stakeholders also have to adhere to certain norms and rules (Table 5). This fits to studies recognizing that support from officials and community leaders is important [47]. Meeting the norms and rules often needs to follow a top-down approach. Principles share characteristics of norms and rules, too. Rules, laws and norms finally are outcomes of processes to which all people in a region (have to) abide to. This helps to understand notions of some individuals that land-use regulations may be not directly related to, or dependent on people's participation (Table 8). Land-use is a good example, since countries have different laws permitting or even requiring participation in the process.

5.2. Findings on participation methods

Findings on digital versus physical means of communication are important due to the relative scarcity of literature on digital forms of participation and their pros and cons. Overall, the results revealed a differentiated picture on the usability of digital tools as not only dependent on technical availability, or type of medium preferred, but also on the interest and willingness to participate, often more related to urban-rural contexts than to the medium alone (Table 6).

The importance of physical meetings to convey a better "feeling" of

being included in the “whole picture” is worthwhile re-examining in the light of the ongoing Covid-19 pandemic. This feeling of a holistic picture may relate to the procedural involvement in participation processes, from the start, or rather, at the end [33]. But it could also be related to how much people are informed and knowledgeable about FRM (Table 9), or whether the represented stakeholders in a meeting feel encouraged to speak out. And this is not restricted to regular citizens, but to officials, too (see 5.3).

5.3. Study limitations

Besides the caveats regarding the sample size, limitations of the research design in this study also include selection biases of interviewees since most were selected through personal acquaintance. This of course had the benefit of engaging with busy stakeholders, especially during the Covid-19 pandemic. Survey questions were formulated to meet expert contexts, too, which meant that certain simplifications such as asking about “methods of participation” in a broad sense and not investigating specific methods of participation such as Participatory Rural Appraisal [28,48], ‘co-design approaches’ [49] or similar participatory and community-based approaches [7]. Despite these drawbacks, the findings allowed us to shed new light on the challenges of participation.

5.4. Findings on participation gaps

While the importance of participation is stressed in the literature, a critique of and articulation of constraints on participation are less common. For example, there are few doubts regarding the value and depth of participation [50] and often formulated rather mildly as “... requires time and patience ...” [15]. But even in detailed descriptions of challenges and failures, the main focus is on justifying the benefits of participatory approaches, often lacking a real criticism and balancing of pros and cons [48]. Here we tried to explore some of the constraints, as well as success factors, expressed by respondents. Some of the participants were also quite guarded though, in formulating a critique. This may be due to a general climate where it is known that participation ought to be conducted, and obligations exist, but where either experience on how to do it successfully is insufficient to permit claims about shortcomings, or, other factors inhibit respondents from expressing their doubts clearly. Nevertheless, respondents did say how difficult it is to do participation well, that it is labor-intensive, that organizations lack capacities to conduct it effectively, and often there is an unwillingness of stakeholders, including people affected, to participate [34].

There are few structured critiques on participation in academic literature or NGO publications [10]. Warning of dangers in applying methods can be found in PRA, for example: “instant fashion”, i.e. “vulnerable to discrediting by over-rapid promotion and adoption, followed by misuse, and by sticking on labels without substance.” A second danger is “rushing”, which can be avoided by “care, patience and planning”, a third is “formalism”, meaning an “urge to standardize and codify, often in the name of quality”. A final danger is “routinization and ruts”, pointing to “slipping into unvarying standard practices, overlooking other options.” [28]. Many studies, also in FRM, list pros of participatory processes, also in comparison to consultation processes, but mention few cons, namely, “tendency to avoid conflicts”, “difficulty to engage stakeholders” and number of participants [39]. The delphi method can help to document both pros and cons of such processes in FRM [51].

Also, in other contexts it is rare to find open critiques such as on the difficulty on making everyone satisfied in such time and resource consuming processes. This low number of studies including such critique could be due to participation being widely acknowledged as a common benefit beyond doubt. But some experience that stimulated this study, in exchange with stakeholders from practice that were however careful not to phrase this openly, one could get an impression, that streamlining

with participation is an expected and politically correct process. This might suppress findings on problems, challenges and limitations of participation and hence, hinder this process and academic study of it.

As a summary, Table 11 highlights certain aspects discussed in this article that may help to inform other conceptual frameworks on participation.

6. Conclusion

Based on a wide distribution of the notion of the importance of participation in DRR, this article investigated who understands what under the term participation. The basic question is intended to unravel whether all have the same notion, or, “understanding of the issue” [47], as could be expected by the wide distribution and prevalence of ‘principles’ of participation.

The findings of the expert interviews conducted in seven countries in Asia, Europe and South America confirm that participation as such is regarded as important. But the responses also reveal that certain differences of this notion exist that are not captured by existing ‘principles’ or dimensions yet (Table 11). For instance, differences of willingness to participate exist within the same country contexts and are, for example more tied to cultural backgrounds of people in rural versus urban settings. In certain contexts, willingness is short due to a lack of awareness, but in other contexts, it is low upon realization of responsibility or upon expecting to receive something in return. While all this may relate to common knowledge, another main finding of this article is the lack of open expressions of doubt on the benefits of participation. And the reasons behind it, which may correspond to a general expectation that participation must be beneficial per se. This is maybe due to a lack of studies and advice in guidelines and ‘principles’ of participation about existing shortcomings and limitations. It has also been noted that the objectives of the participatory processes in terms of overall benefits, at times, do not capture the benefits anticipated by the participants, which generate a gap between the participatory development objectives and the aims under which participants take part in such processes. Bridging this gap is important for making such participatory processes more effective and meaningful as well as more transparent to all participating actors. Another line of investigation inquiring participation principles should cover the topic that whether such participatory processes are being opted in true letter and spirit by the organizations involved in FRM for meeting the real purpose of benefiting the development process, or they are being used as a formality to serve some mandatory requirements in an eyewash manner. Only when the former realization will prevail, there will be more guidance and effort to make the participatory processes more inclusive, accessible and participants’ friendly. Future research on the topic should inform the relevant policy oriented international organizations to devise participation frameworks to achieve the desired results.

In summary, while there is a large, at least international, promotion of participatory processes, there is still a need to enable conducting such

Table 11 Identified fields for future research.

Principles	Methods	Gaps and constraints
Perception vs. behavior	Advice on language subtleties/humor	Advice on implementation gaps
Urban vs. rural contexts	Holistic feeling within digital meetings	Enabling expression of gaps and doubts Bridging the gap between the objectives of participation and the participants
Willingness vs. responsibility and expectations	Advice on participants’ benefits	Guiding on participation framework and outputs
Need vs. formality	Advice on participants’ friendly settings	Clarify the amount of influence can have on the final decision
Advisory vs. decisive	Advice on influence on decision	

processes for all stakeholder sides and for those expected to conduct it and those expected to participate in it. Further research that provide balanced reflections on the opportunities but also gaps and challenges resting within the expectations behind participatory approaches are needed to inform international frameworks. This could not only help in making them more comprehensive and credible, it could also provide key guidance for stakeholders who often are thrown into the role of participation instigators, moderators or conductors without proper advice but accused of intransparent decisions later.

A starting point for future studies could be analyzing international guiding documents on DRR that call for the participation of different groups of stakeholders, such as the Sendai Framework and suggesting to add more balanced advice on benefits as well as gaps and challenges, beyond simplistic advice on how to overcome data gaps. It would also be helpful to add nuances of failings of participatory approaches and stereotyped expectations of “the people” or “the decision-makers.” When a culture of openly addressing caveats and shortcomings is encouraged, scientific studies and practical applications will benefit from it, as well as those named “stakeholders”.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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