

Social Sciences Spectrum

A Double-Blind, Peer-Reviewed, HEC recognized [Y-category](#) Research Journal

E-ISSN: [3006-0427](#) P-ISSN: [3006-0419](#)

Volume 05 Issue 04, 2026

Web link: <https://socialsciencespectrum.com/index.php/sss>



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Building Equitable Flood Resilience Across Unequal Contexts: A Comparative Analysis of England and Pakistan

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Article Information [YY-MM-DD]

Received	2026-08-17	Revised	2026-09-20	Accepted	2026-10-17
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Citation (APA):

Rehman, I (2026). Building equitable flood resilience across unequal contexts: A comparative analysis of England and Pakistan. *Social Sciences Spectrum*, 5(4), 380-395. <https://doi.org/10.71085/sss.05.04.620>

Abstract

Social differentiation of risk, but resilience policy can mask unequal capacities in preparing, responding, recovering and adapting. In this study, the social equity of current flood risk governance in two contrasting national contexts (England and Pakistan) is compared, as both have high flood risk exposures and vary significantly across institutions and socio-economic factors. The structured and focused comparative review provides a synthesis of the peer-reviewed research and policy documents, focusing on evidence published between 2022 and 2026 with a number of selected foundational sources. The analysis uses a recognition, distributive and procedural justice approach to look at social vulnerability, governance, participation, risk information, protection, finance and recovery. It reveals that while there are well-established risk-management institutions, investment options and insurance in England, there are areas of vulnerability that are not well recognized, access to measures at household level and influence on decisions that is unequal. Despite the growing inclusivity of recovery policy in Pakistan, the country is grappling with greater resource shortages, livelihood insecurity, gendered vulnerability and uneven local implementation. In each context, socially just adaptation requires an assessment of vulnerability, warnings that are accessible, resource allocation that is transparent, and participation – as well as recovery – that builds long-term adaptive capacity. The study finds that the transferable principles are more powerful than transplantation of policies in unequal settings.

Keywords: Social Vulnerability, Recognition Justice, Distributive Justice, Procedural Justice, Climate Adaptation, Community Participation, Institutional Capacity.

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Introduction

Flooding is an interplay of hydrological hazard, governance challenge and social process. The topography, precipitation, drainage, and land use influence exposure to floodwater; income, housing, health, social networks, access to information, insurance, and institutional support and political voice, mediate the consequences of flooding. This means that two houses located in the same physical flood risk zone could have different flood losses and recovery paths. This separation has taken on greater significance as the change from flood defence to flood-risk management moves away from prevention and toward 'resilience', 'adaptation' and 'living with risk'.

Resilience-based policy has the potential to perpetuate inequality, however, if it assumes that all households and communities can prepare, respond and recover equally. Matin et al. (2018) state that social vulnerability, disempowerment, lack of access to knowledge/ power/resources, lack of inclusion and lack of cross-scale relations, as well as the potential for transformation, must all be addressed in order to achieve equitable resilience. Research on flood risk also reveals that fairness is not an aspect that can be sidelined in risk management: who is protected, who pays, who participates, and which losses are counted, are all elements of a distributive and procedural nature (de Goër de Herve, 2022). Resilience is not only about resisting disturbances but also about the recognition of vulnerabilities, the value of knowledge and the possibility for recovery (Juhola et al., 2022), and this is where adaptation scholarship around justice comes in.

England and Pakistan offer a helpful analytical comparison as they are “most-different” cases. Key strengths include relatively robust institutions, relatively experienced flood-risk governance, relatively comprehensive flood risk mapping, capital investment programmes, and local flood authorities in addition to a formal flood-insurance programme, in England. The national Flood and Coastal Erosion Risk Management (FCERM) Strategy aims to create resilient places, pathways and a wide range of resilience actions (Environment Agency, 2020). Despite this, the national assessment by the Environment Agency shows that approximately 6.3 million homes in England are still at risk of flooding from rivers, sea or surface water, with the risk of this increasing as the climate changes (Environment Agency, 2024). In contrast, the poverty and livelihood vulnerability are far greater in Pakistan, public resources are far more constrained and there are significant implementation gaps in the local disaster-risk governance. The 2022 Floods revealed the extents of these structural vulnerabilities, which impacted an estimated 33 million people and resulted in over 1,730 deaths, with losses exceeding US\$14.9 billion, economic losses estimated at US\$15.2 billion and resilient reconstruction needs estimated at US\$16.3 billion (Government of Pakistan et al., 2022).

Comparing England is not meant to be a benchmark and Pakistan a deficit case. Instead, it explores how inequity is generated in the various institutional and socioeconomic processes. The examples of governance and significant investment in development, as shown by England, are not sufficient to eradicate social vulnerability, and the examples of high exposure and small domestic resources, disproportionate institutional capacity and gender inequality, as seen in Pakistan, are enough to exacerbate the impacts of flooding. By using a comparative justice approach, it is possible to clarify what is transferable and what is context-specific in terms of policy instruments.

This paper thus explores perceptions of and approaches to equitable flood resilience in England and Pakistan, and how governance and resource disparities affect flood resilience, while highlighting that the principles of flood resilience can be transferred across contexts but do not necessarily lead to the same policy outcomes.

Research Problem, Aim, and Questions

Flood resilience is not the same for all people in society. Some groups are more vulnerable to long-term harm due to differences in income, housing, insurance access, mobility, health, institutional support, and participation and recovery resources. The perspectives of flood resilience, vulnerability and adaptation have received considerable attention in the context of a single country, but there is not a lot of research that investigates how equity is constructed in radically different governance and socioeconomic settings while employing a shared analytical framework.

Aim. To comparatively analyse the links between social vulnerability, governance, institutional capacity and access to resilience resources, and their role in promoting equitable flood resilience in the context of England and Pakistan, and which resilience principles are transferable between both contexts and which are context dependent.

RQ1. What is the level of social vulnerability and equity considered and challenged in flood resilience policy and practice in England and Pakistan?

RQ2. What impact does a difference in governance, institutional capacity, community engagement and access to resilience resources have on flood resilience outcomes in the two countries?

RQ3. What are the principles of equitable flood resilience that can be transferred across England and Pakistan and what are those which are context dependent?

Conceptual Framework: Equitable Resilience and Justice

Equitable resilience is the key concept in this paper. Equitable resilience – challenges the assumption that building aggregate system resilience is a good thing for all groups. Questions it poses is whether interventions for resilience take into account the inequalities in the starting points and whether they change or reinforce access to power and resources (Matin et al., 2018). In this study, equitable resilience is operationalized in terms of three dimensions of justice that have been employed in the fields of climate adaptation and environmental justice: recognition, distributive and procedural justice (Juhola et al., 2022). The framework does not specify too much as this allows the same questions to be asked in two quite different national contexts.

Recognition Justice

Recognition justice is about the recognition and respect of differences in vulnerability, identity, lived experience and capacity in policy and institution. In flood risk management, this means that low-income households, tenants, older people, disabled, women, displaced household, informal workers, etc. are not present in the risk assessment and planning. Experiential and local knowledge must also be paid attention to for recognition. Paauw et al. (2025) find that the recognition of differences in people's capacity to deal with floods is not uniform in regards to flood risk management strategies in England. Mehring et al. (2023) also show that, largely, the emotional and long-term lived experience of flooding can be underrepresented when policies focus on physical impacts. Recognition in Pakistan is closely related to gender, livelihood, poverty, displacement, communication barriers, and the social norms (Iqbal et al., 2024; Ullah et al., 2024).

Distributive Justice

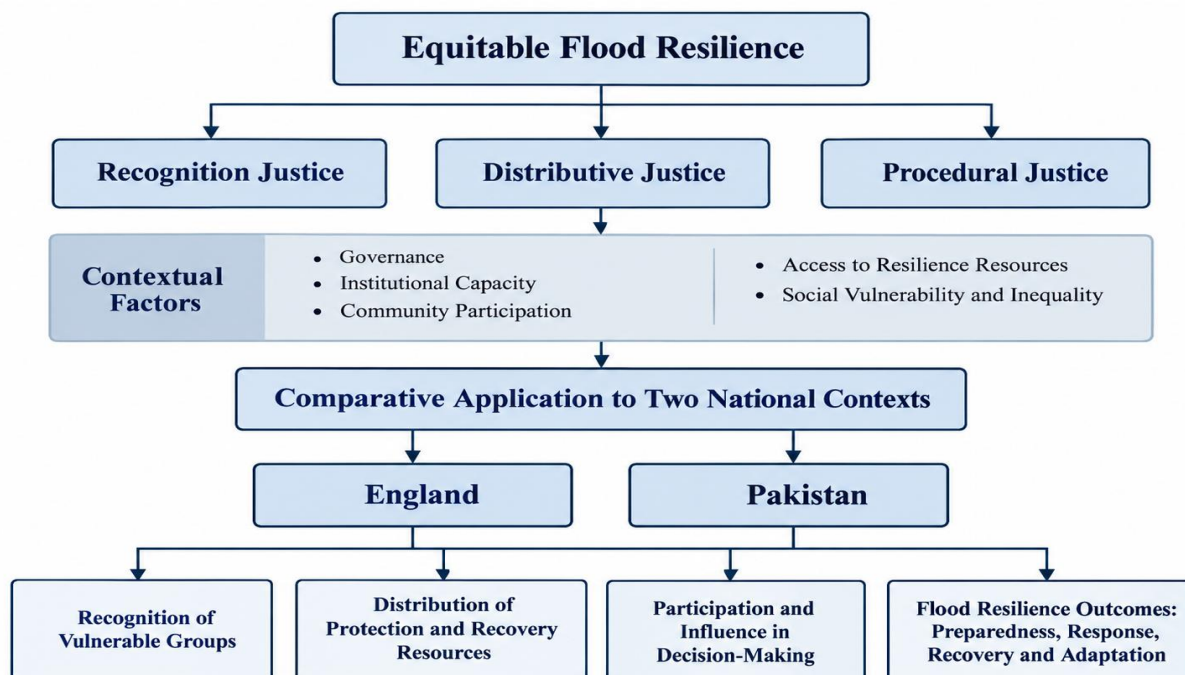
Distributive justice relates to the allocation of risks, protection, finance, insurance, warnings, emergency assistance and recovery and long-term adaptation assistance. Equality does not always mean equity: smaller resource groups might need more support to be as resilient as others. More recent findings indicate that in England, it was those local areas that are more vulnerable and have

a higher risk of flooding that have been identified as having been more favoured for flood funding during the period between 2015 and 2021, but also that there are significant data and scale limitations that make it challenging to conclude that scheme-level allocations are consistently made to the most vulnerable (Goodden et al., 2024). There are some financial vulnerabilities that can be mitigated by insurance, but this is not universally available: Defra research revealed that there was significantly less contents-insurance coverage for renter households compared to owner-occupied households (Defra, 2023). Distributional issues are more pronounced in Pakistan due to interaction of flood losses with poverty, low levels of asset ownership, fragile livelihoods and lack of access to formal insurance or savings. There is then a shift in the recovery frameworks from the post-2022 period to highlight pro-poor, pro-vulnerable and gender-based reconstruction (Government of Pakistan et al., 2022).

Procedural Justice

Procedural justice is about who is included, who is consulted and whether participation leads to an influence or just consultation. A shift from community engagement to community inclusion, from power to relationality, from non-universalism and different local capacities is called for in urban flood governance, according to Watkins and Collins (2025). Studies indicate that One-Way Communication, technical terminology, exclusion of groups from preparedness and weak local institutional interfaces are some of the challenges encountered in Pakistan which affect the people-centred early warning efforts (Shah et al., 2023). Procedural justice in both countries is thus not just a question of the presence of participative processes but also whether the communities have the time, knowledge, trust and institutional access to influence outcomes. The analytical framework adopted for comparing the flood resilience of England and Pakistan at an equitable level is summarised in figure 1.

Figure 1: *Analytical Framework for Comparing Equitable Flood Resilience in England and Pakistan*



Note. *Source: Author's own synthesis.*

Research Methodology

This research follows within the qualitative secondary research method with a structured, focused comparative case study method. The two countries, England and Pakistan, are presented as examples of contrasting national situations, and the same analytical questions raised about them. The design of the design based on cases is inspired by the most different cases approach and includes a high degree of variation in income, public resources, institutional capacity, insurance coverage and governance arrangements between both countries, with both countries experiencing material and growing flood risk. The aim is not to make generalizations about equity but to provide analytical insights into how equity is either enhanced or undermined. The primary evidence period is 2022 – 2026. The use of earlier literature is selective, focusing on using existing foundational theory and/or policy context that is relevant, such as the equitable-resilience framework and England's 2020 FCERM Strategy. Academic evidence was given greater weight if it was relevant to the aspects of flood resilience, vulnerability, justice, governance, community engagement, early-warning system, recovery and resource allocation in England or Pakistan. Policy and institutional documents were sourced from nationally authoritative sources such as the Environment Agency, Defra, Government of Pakistan, World Bank and the United Nations Development Programme.

This manuscript analytical corpus includes 14 key academic/research publications and nine policy or institutional documents. It is a structured comparative review and not a meta nor a comprehensive systematic review. As such the study does not imply effect sizes and does not guarantee that all relevant literature is included. Sources were mapped to six analytical categories: (1) recognition of vulnerability; (2) provision of protection and finance; (3) involvement and decision-making; (4) institutional capacities and coordination; (5) preparedness, response and recovery; and (6) longer term adaptation and transformation. The results were then plotted on the three justice measures and analyzed by comparison among cases.

Table 1 summarizes the comparative design.

Table 1: *Comparative Design and Analytical Framework*

Element	Applied approach	Purpose
Cases	England and Pakistan	Most-different national comparison
Main period	2022–2026	Contemporary flood resilience and recovery context
Evidence	Peer-reviewed research + authoritative policy/institutional documents	Triangulate empirical and policy evidence
Core lens	Equitable resilience	Evaluate social differentiation in resilience
Justice dimensions	Recognition, distributive, procedural	Common analytical framework

Element	Applied approach	Purpose
Key mechanisms	Governance, institutional capacity, participation, risk information, protection, insurance/finance, recovery	Explain why outcomes differ
Output	Cross-case mechanisms + transferable principles	Avoid simplistic policy transfer

Note. *Compiled by the author.*

Flood Resilience Context in England

Institutional Architecture and Risk Information

The flood-risk-management system in England has a very complex institutional structure, with the Environment Agency, lead local flood authorities, district councils, internal drainage boards, highways authorities and water companies having a significant role. The national FCERM Strategy sets out a vision of a nation prepared for and resilient to flooding and coastal change, through the lens of the four interrelated strands of climate-resilient places, climate-resilient infrastructure and a population that is ready to respond and adapt (Environment Agency, 2020). The ambitions are broken down into practical actions and partnerships in the Strategy Roadmap to 2026 (Environment Agency, 2022).

One of the strengths is the availability of the national level risk information, which is of good quality. The National Flood Risk Assessment 2024 (Environment Agency, 2024) gives a national perspective on the current and future flood risk from rivers, the sea and surface water, incorporating the latest flood modelling and UK climate projections. It estimates that approximately 6.3 million properties, including 4.6 million vulnerable to surface-water flooding and 2.4 million vulnerable to flooding from rivers and the sea are in at-risk areas (Environment Agency, 2024) and some properties may be at risk from more than one source of flooding. This facilitates planning, investment, emergency response and awareness of public risk. However, better physical risk information does not guarantee better outcomes if vulnerability is not also a function of social capacity, in addition to exposure. There is evidence which supports the relationship between social deprivation and flood vulnerability in England (England's evidence base), which has been used in investment rules and in policy thinking (Environment Agency, 2025). The Agency's latest analysis has found that there are approximately 11.3 million people in England who live in a flood risk area, over 2.5 million of whom are exposed to flooding from rivers, the sea or surface water and nearly one in four who are exposed to flooding from surface water live in the most deprived towns and cities (Foley, 2026).

Recognition of Social Vulnerability

Recent evidence from England shows improvement and gaps in the recognition of vulnerability. The identification of vulnerable populations varies with the spatial scale and index used, as seen by Goodden et al. (2024). Many practical implications arise: areas could be seen as vulnerable at a higher level of authority, but pockets of vulnerability could be hidden at neighborhood level, and the reverse is true. However, they also recognize that there are gaps in the information available on funding of schemes that is accessible to the public, which limits transparency around the inclusion of vulnerability in local investment decisions.

Limited recognition is also given when the flood impacts are presented primarily in terms of damage to property, infrastructure and direct economic loss. Mehring et al. (2023) demonstrate that for those who are living with flood risk, fear and anxiety can persist, home may be disrupted, and a cycle of “home unmaking” and “home making” may occur. Such impacts are relevant to equitable resilience as households who do not have an available financial resource have fewer impacts.

Distribution of Protection, Funding, and Insurance

DPI is sharing protection, funding, and insurance - sharing protection, funding, and insurance. There are distributive mechanisms that are stronger in England than in Pakistan: public investment in flood schemes; formal planning controls; property level resilience measures and a well-developed insurance market. While vulnerability was not entirely absent from investment practice, Goodden et al. (2024) identified that higher flood risk and social vulnerability areas were funded more in higher tier areas. The same study, however, raises concerns about the feasibility of assessing the equitability of investment at the scale where people feel exposed, given the limitations of data available at the local level in local schemes.

There are increasing signs of policy response. The Environment Agency states that it has adopted a new funding policy for FCERM, which is to invest at least 20% in the most deprived communities, and at least 40% in the two most deprived groups combined (Foley, 2026). These pledges show a greater move towards being distributive in those affected and are now subject to further analysis of who will be protected, alongside the transparency of the scheme level which Goodden et al. (2024) identified as being generally limited.

Another key resilience resource is insurance. The purpose of Flood Re was to make flood insurance affordable and available to eligible households at high risk. Defra's affordability review revealed that the majority of homeowners felt that premiums were affordable, whereas for those living in rented accommodation, there was less likely to have contents insurance (Defra, 2023). The nationality of the insurance system matters for distributional effects: a national insurance system can decrease financial vulnerability, but groups with lower insurance rates or less awareness and insecure home tenure are less protected. Equity thus relies on the interaction between the design of the policy and the access of the households.

Participation, Local Capacity, and Adaptation

England has a policy framework that encourages the involvement of communities, and meaningful participation is inconsistent. Rather than simply inviting them into the already established process, inclusive flood governance depends on more than just that, according to Watkins and Collins (2025). The degree to which engagement turns to influence is determined by variations in local capacity, power, relationships and worldview. This is especially true when the communities are deprived as their volunteer time, technical literacy and institutional confidence might be limited.

Implementational gaps are identified through local planning. The local flood-risk-management strategies in England are largely compliant with the statutory minimum requirements, however many are failing to adequately consider an increase in surface-water risk due to climate change (Russell et al., 2024). Hence strong national architecture is possible to accommodate local adaptation variabilities. The case indicates that resilience institutions need regular updating, monitoring and accountability for them to be equitable in the face of evolving risk.

Flood Resilience Context in Pakistan

The 2022 Floods and Structural Vulnerability

There is high climate exposure and significant socioeconomic vulnerability in Pakistan's flood resilience context. In 2022, an estimated 33 million people were impacted by the floods, resulting in over 1,730 deaths and unprecedented losses of housing, agriculture, infrastructure and livelihoods. As per the official Post-Disaster Needs Assessment (PDNA), the most affected sectors of damages were housing (US\$5.6 billion), agriculture and livestock (US\$3.7 billion), and transport and communications (US\$3.3 billion) while there were estimated losses of around US\$15.2 billion and needs of resilient reconstruction of at least US\$16.3 billion (Government of Pakistan et al., 2022). The assessment also estimated that up to 9.1 million new people may become poor due to the floods (Government of Pakistan et al., 2022). This was not a neutral loss and damage. This loss was not a neutral loss and damage. Households experiencing insecure housing, low asset ownership, service access and displacement exposure, and agricultural dependence were more likely to have experienced greater barriers to recovery.

A federal government initiative for resilient recovery, rehabilitation and reconstruction, the Resilient Recovery, Rehabilitation, and Reconstruction Framework (4RF) makes it clear that it is looking for a resilient, inclusive and people-centered recovery. It focuses on socio-economic rehabilitation, rebuilding critical infrastructure, capacity enhancement of stakeholders and governance, social inclusion and community engagement (Government of Pakistan, 2022). On the policy front, therefore, Pakistan has taken steps towards being more aligned with equitable resilience. Implementation across provinces, districts and communities where institutional and fiscal capacities are different, is the big issue.

Recognition of Differentiated Vulnerability

Recent studies have documented various and overlapping vulnerabilities. In a study conducted by Iqbal et al. (2024) it found that women living in flood affected areas of Sindh were most vulnerable due to mobility restrictions, social norms and low asset ownership even when having access to preparedness information was comparatively good. In a similar study, Ullah et al. (2024) also identified economic hardship, displacement, gender inequality and crowded relief environments and restricted health services as contributing factors to violence against women and documented women's local knowledge, social networks and coping abilities. Following the 2022 floods, Ashraf et al. (2024) reported barriers women experienced when accessing sexual and reproductive health services in severely affected districts.

There must be more than a simple act of labeling the “women” or “the poor” as vulnerable in order to establish recognition justice. Vulnerability is distinguished by livelihood, age, disability, displacement status, household authority, location, access to transport and services and how warnings are being converted into action. Rehman (2026) draws this evidence together to propose a gender-sensitive approach to climate mobility and flood-resilience that connects existing unequal conditions, preparedness, early warning, safe mobility, protection during displacement, livelihood recovery, and long-term adaptation. This reiterates the importance of resilience policy that accompanies vulnerability throughout the disaster cycle.

Early Warning, Participation, and Institutional Capacity

While the technical aspects of flood forecasting and early warning are being invested in, the people-centred elements of warning systems are still not equally developed in Pakistan. Based on the surveys of households and focus groups conducted in KP, Shah et al. (2023) listed some

important barriers such as poor access to need, lack of understanding or response to alerts, weak producer-user communication, non-participation in preparedness, lack of resources, and low trust. The authors highlight the importance of the NGOs as intermediaries in the process of disseminating risk information, enhancing communication and building links between the community and institutions.

The findings indicate a procedural-justice issue. A technically correct warning is not fair if it is not in a language that everyone can access, if it is not reaching socially marginalized people or if it assumes that households can be mobile and have the resources to follow the warning. Likewise, communities are not consulted and have little influence on preparedness, evacuation, shelter, and recovery priorities, resulting in poor participation. More robust district-to-district connections, more localized warnings, trusted intermediaries and two-way communication are then at the core of equitable resilience.

Household Resources, Recovery, and Resilience

The importance of social, economic and institutional capacity is apparent at the household level. Hamidi et al. (2025) created a multidimensional index of household flood-resilience in Nowshera, which showed significant differences among the communities. Use of communication tools, basic utilities, social networks boosted resilience, whereas low levels of preparedness, absence of emergency plans, financial unpreparedness and low level of trust in government disaster-risk-reduction programmed weakened it. This is a good example of the fact that physical works will not create equitable resilience.

Challenges of recovery faced by Pakistan are distributive too. Households with low saving levels, land holdings, credit and employment security or insurance coverage have less resources to cushion loss. In poorer settings, it is the role of the recovery assistance that has to be played by household financial markets and insurance systems in wealthier settings. While targeting for livelihoods restoration, social inclusion and resilient infrastructure is apt, a transparent targeting system, gender sensitivity to access, local monitoring and long-term intervention is required for equitable implementation of 4RF.

The opportunity and challenge of targeting is illustrated by international financing. The World Bank in May 2023 approved \$213 million to support efforts for livelihoods and access to essential services and risk protection in flood-affected communities, particularly in Balochistan, a province which it deemed is severely vulnerable to disaster due to its geographic, socioeconomic and climate vulnerability. It was projected to positively impact around 2.7 million people and to foster social inclusion and participation (World Bank, 2023). It is an empirical question whether such programmed actually reach the poorest households, and women in particular, and this can only be determined by open and clear targeting and local monitoring. **Comparative Findings**

The cross-case comparison suggests that there is a degree of inequality in both countries, but it is created in different ways. The problem in England is not lack of institutions or resources, but the need to ensure that sophisticated systems are sensitive to social differences and investment, insurance and participation are extended to those with different capacities. Pakistan's challenge is compounded by the issue of recognition and participation along with significant resource limitations, poverty, livelihood vulnerability and the magnitude of the post-disaster reconstruction requirements. The comparison is summarized in Table 2, which displays the comparison by six dimensions of equity.

Table 2: Cross-Case Comparison of Equity Dimensions

Dimension	England	Pakistan	Comparative implication
Recognition	Strong physical risk data; growing attention to social deprivation, but vulnerability varies by index/scale and lived psychosocial impacts can be under-recognized.	Gender, poverty, displacement, livelihood and service inequalities are pronounced; policy increasingly recognizes these but local implementation is uneven.	Risk mapping must integrate social and lived vulnerability, not exposure alone.
Distribution	Public investment, insurance and property-level resilience provide substantial resources, but access and local targeting are uneven.	Large recovery needs, limited household finance/insurance and unequal access to assets create major recovery disparities.	Equity requires vulnerability-weighted finance and transparent allocation.
Procedure	Formal consultation and community engagement are established, but influence depends on local capacity and power.	Participation often constrained by technical communication, weak local interfaces, trust and institutional capacity.	Meaningful participation requires capacity-building and two-way governance.
Preparedness / warning	Advanced forecasting and national information systems; effectiveness still depends on public uptake and local capacity.	Technical warning systems exist but communication, interpretation and action barriers remain.	Early warning must be people-centered and actionable.
Recovery	Insurance, public services and institutional support strengthen recovery, though renters and disadvantaged households may remain less protected.	Recovery is strongly shaped by poverty, informal livelihoods, displacement, gender and service disruption.	Recovery policy should reduce pre-existing vulnerability rather than merely restore assets.
Adaptation	Adaptive pathways and planning frameworks are institutionalized but implementation varies locally.	Resilient reconstruction is embedded in policy after 2022 but constrained by finance and institutional capacity.	Long-term adaptation requires sustained institutions, finance and accountability.

Note. *Synthesized by the author from the sources cited in the text.*

Recognition Justice Across the Two Cases

It is more institutionalized in England with deprivation metrics, flood-risk data and a growing focus on vulnerable groups. However, there is evidence that recognition is conceptually fluid:

various markers and geographies give different views of the vulnerability (Goodden et al., 2024). The problem is much more direct for Pakistan as poor people are clearly vulnerable, women are clearly vulnerable, and those who rely on livelihoods are clearly vulnerable, and access to services is not equal. In either case, there's a shared challenge in both countries: Policy categories can homogenize lived difference. The material condition of a tenant with no contents insurance in England and of a land-poor displaced woman in Pakistan are very different; both are examples of where categories of institutional capacity do not adequately reflect material capacity.

Distributive Justice Across the Two Cases

The public and private resilience resources are significantly higher in England. This helps to reduce some inequalities but raises another distributive issue: Is there a need for more sophisticated mechanisms that are accessible and targeted? The challenge of scarcity is a bigger problem for Pakistan. Private insurance, savings and credit are limited in some contexts, in which public recovery programmers ought to cover losses. The equity principle that carries over from one setting to another is really "allocation based on risk, vulnerability, ability to recover and likely long-term consequences of loss" rather than "equal spending per household. The two cases demonstrate this in different ways: England has set minimum thresholds for deprived communities, underlining the need for pro-poor investments (Foley, 2026), and the recovery strategy in Pakistan has listed pro-poor principles, and heavily depends on external financing partners (World Bank, 2023). In both, the overriding question is whether allocations could be identified with the least able to be reimbursed.

Procedural Justice Across the Two Cases

The two cases are examples of the fact that participation does not equal procedural justice. There are opportunities for consultation within England's formal governance but the local capacity and power influences who can be effective with their participation. Other challenges that Pakistan has are technical jargon, less developed institutional linkages at local level, lack of trust and representation gap. The common thread is that; institutions need to build capacity to participate rather than opportunity to participate. This will involve information that is accessible, community intermediaries, representation of those that have been marginalized, transparency in decision-making and feedback on plans that reflect local knowledge, and mechanisms for changing plans as a result of local knowledge.

Cross-Case Discussion

The comparison is based on two simplistic assumptions. The first is that injustice isn't removed with a boost in institutional capacity. England shows that, even with a well-developed flood-risk system, social and psychosocial vulnerability is under recognized, the distribution of this kind of vulnerability is not always known and participation may benefit communities with greater capacity. Second, the lower-resource settings should not be considered as institutional vacancies. Pakistan has a long history of national policy commitments, technical warning institutions, provincial systems, capacity and community knowledge of civil society.

The challenge is how these capacities are linked, funded and put into a dependable local practice. Equitable resilience is thus best understood as a relationship between hazard exposure, social vulnerability, and institutional capacity and access to resources. The marginal benefit in England could be through improved targeting, recognition, participation and support for those who escape from good systems of support. Equity also needs fundamental investments in services, livelihoods, local institutions and recovery finance in Pakistan. This justice principle could thus suggest other

policy tools. Scale is also part of the comparison. It's possible that a national policy be equity-based yet the execution at the local level be uneven. The authors of Goodden et al. (2024) demonstrate that vulnerability scales the relationship between flood funding and vulnerability in England.

The need to strengthen the final mile capacity of early-warning in Pakistan at the national level or technical level is demonstrated by Shah et al (2023) who show that this can be undermined by the absence of local communication and response capacity at the final mile. In both, equity is created or destroyed 'at the interface' between national systems and the realities at household level. Lastly, the measure of resilience needs to be a time-series one. With immediate survival or rapid restoration, inequality can be hidden in the long run. There is evidence from lived experiences in England that emotional effects can last long after physical repairs have been made (Mehring et al., 2023).

The long-term impacts of the floods on livelihoods, health, displacement, and gendered security in Pakistan have been documented (Iqbal et al., 2024; Ullah et al., 2024). Equitable resilience thus involves the monitoring of protection against next flood as well as the distribution of recovery trajectories.

Transferable Principles for Equitable Flood Resilience

Even though the instruments they are used in change, the comparison results in five principles that can be transferred in both contexts.

1. *Vulnerability-sensitive risk assessment.* Physical maps of flood risks need to be integrated with social vulnerability, tenure, health and disability status, gender, livelihood dependence and the ability to recover from floods. The indicators should be locally appropriate but the concept of exposure and capacity can be transferred.
2. *People-centered early warning and preparedness.* Warnings should be comprehensible, credible, available and tied to a realistic response. In both cases, two-way communication, the use of local languages, trusted intermediaries and community preparedness are important.
3. *Transparent and vulnerability-aware resilience investment.* There must be a clear understanding of the impact of social vulnerability on priorities in investment decisions. Public reporting should allow for analysis at the community-scale where schemes have impact. It also holds true for recovery grants and financing for livelihood and reconstruction in Pakistan.
4. *Meaningful community participation.* Engagement shouldn't be mere provision of information; it should be influence. Participation mechanisms need to be resourced to enable low-capacity communities to participate effectively, and marginalized communities need to have direct access to decision-making.
5. *Recovery that builds adaptive capacity.* Recovery should not duplicate vulnerabilities prior to the flood. Integration of housing, livelihoods, services, insurance/social protection, local preparedness and institutional learning to minimize risk during recovery. Policy and Practice Implications.

Policy and Practice Implications

Implications for England

- Applications of deprivation and vulnerability should be continued to be included in flood investment appraisal, but data for schemes will be increasingly made available to the public so

distributional effects can be considered at neighborhood scale, including distributional effects of the new minimum-share funding commitments.

- The scope of impact assessment needs to be expanded beyond physical damage to include other areas such as tenure, health, psychosocial recovery, insurance access, repeated disruption and other areas, by risk-management authorities.
- The factors that changed decisions as a result of community engagement should be included in standards: who participated, who was excluded, how, and how engagement was supported in low-capacity communities.
- Local flood-risk strategies need to be regularly reviewed against the evolving climate projections, surface-water risk and adaptation needs, building on the gaps identified by Russell et al. (2024).
- There should be a strong emphasis on monitoring renters, low-income groups, and other groups with lower resilience investments or levels of take-up of resilience programmes in insurance and property-level-resilience programmes.

Implications for Pakistan

- Investment in people-centered early-warning systems should be paired with investment in forecasting technology, such as local-language communication, two-way feedback, evacuation support, and community preparedness.
- Strengthen the district and local disaster-management capacity to ensure the operational preparedness of the national and provincial commitments in terms of inclusive shelter, recovery and adaptation.
- Recovery finance to focus on households that are low asset, are vulnerable to displacement, have insecure livelihoods and have gender-specific barriers to recovery with clear criteria for eligibility and mechanisms for addressing grievances.
- Women and other marginalized groups should not only be identified as beneficiaries of preparedness, shelter design, livelihood recovery and reconstruction, but also be represented.
- Recovery monitoring should document livelihood restoration, health, education, security of housing and social protection over time and not be limited to physical outputs to measure reconstruction.

Implications for International Policy Transfer

Policy transfer should be on principles and not copying instruments. It is not just possible, but essential, to adapt England's insurance architecture to Pakistan's context of low levels of formal insurance coverage, low incomes and low property values. Similarly, the community and NGO mediation processes in Pakistan are also conducted in a social and institutional environment which is different from England. The core of the transfer is the concept of vulnerability; resources have to be allocated on the basis of vulnerability and capacity; meaningful pathways for participation have to be developed; preparedness and recovery and long term adaptation have to be linked.

Limitations

The following are the main limitations of this study. First, it is not a systematic review and the system of evidence is therefore selective as structured comparative review. Second, the comparisons at the national level can mask significant sub-national differences – flood governance works differently in different local authorities in England and in different provinces and districts in Pakistan. Thirdly, evidence bases are skewed. In contrast, Pakistan has received a lot of

influence from the exceptional flood event of 2022 and case studies in specific provinces, in the recent literature, while England has relatively strong administrative datasets and policy documentation. Fourth, justice is manifested in terms of recognition, distribution and procedure, which are the primary dimensions of justice analyzed within this paper, though other aspects of justice such as restorative, intergenerational and ecological are important. The terms of the update of funding commitments for the Environment Agency's environmental infrastructure work, and project announcements from the World Bank, have not yet been assessed for equity impacts, and remain tentative. The comparative framework needs to be applied to a number of sub-national paired cases and primary qualitative data from affected communities and institutions in future research.

Conclusion

This study makes a comparison between equitable flood resilience of England and Pakistan based on a shared justice framework. The analysis also shows that, while defenses, forecasts, institutions and recovery programmers influence flood resilience, their abilities to acknowledge differential vulnerability and allocate resources for resilience and provide meaningful participation can be just as important. The relatively developed system in England offers good risk information, investment structures, insurance promotion and adaptation planning, and recent funding pledges are designed to allocate at least a portion of the investments to deprived communities.

However, equity is not yet realized when social vulnerability is challenging to measure, when local funding transparency is limited, when renters and disadvantaged families are not as well protected, or when participation is stacked in favors of communities with more capacity. The structural vulnerability, livelihood insecurity, gender inequality, and weak local implementation and limited recovery resources are a more serious set of vulnerabilities in Pakistan. Nevertheless, the policy commitments after 2022 offer a strong platform for building greater inclusiveness in resilience, as do the capacities of communities and the roles of civil society. The major comparative point to make is that not all types of policies are equal and do not need to be in place in all unequal contexts in order to be equitable in terms of resilience. It entails principles that are common but need to be interpreted in a context-specific institutional setting. The vulnerability-sensitive risk assessment, people-centered warning, transparent and need-sensitive investment, meaningful participation and recovery that enhances long-term adaptive capacity are transferable between both countries. The challenge in the practical world is to shift from resilience as an overall measure of system performance to resilience as a socially-configured process where the distribution of protection, voice, resources and recovery opportunities is made explicit.

Conflict of Interest

The authors showed no conflict of interest.

Funding

The authors did not mention any funding for this research.

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