
BUILDING RESILIENCE AGAINST CLIMATE CHANGE AND THE NEED FOR CHILDREN INCLUSION IN NEIGHBOURHOOD SECURITY SURVEILLANCE

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Abstract: This archival-based study explores the connection between climate change resilience and neighborhood security. It emphasizes the vital role of neighborhood surveillance and highlights the importance of children’s active participation in strengthening resilience. This is especially relevant in both urban and rural areas affected by environmental degradation and social insecurity. Despite being among the most vulnerable to disruptions caused by climate change, children are often left out of security initiatives. This research advocates for their inclusion in neighborhood surveillance programs, showing how their involvement can greatly enhance community resilience. By drawing on ecological resilience theory, child rights literature, and case studies from regions impacted by climate change, the study demonstrates that integrating children into community security efforts is both feasible and essential. Such integration can help foster neighborhoods that are more resilient and better able to adapt to environmental challenges.

Keywords: Climate Resilience; Neighborhood Security; Child Inclusion; Environmental Degradation; Ecological Resilience

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INTRODUCTION

Climate change is among the current world's most pressing and challenging issues, and it has immense implications for the world (Abbass et al., 2022, p. 42539). Climate change effects are much more pronounced in the developing world, and this is especially true when it comes to the availability of infrastructure and the governance systems that operate in such areas. Apart from poverty and social unrest in such areas, climate change further exacerbates such conditions. Climate change can be seen as much more than just environmental changes and triggers that lead to social disorders (Tate et al., 2021, p. 435).



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Increasingly, the threat of climate change has seen resilience feature more in discussions on climate change adaptation. Generally, resilience can be described as the ability of communities and systems to prepare for, recover from, and bounce back from shocks and stresses (Seddon, 2022, p. 1410; Maja & Ayano, 2021, p. 271). Thus, enhancing resilience remains an important approach for improving adaptability in the wake of an uncertain and ever-changing climate.

One of the promising grassroots methods that can be utilized for enhancing and building resilience is that of neighborhood security surveillance systems. Neighborhood security surveillance systems are grassroots methods that include and entail the active monitoring of environmental risks and threats, infrastructural risk and vulnerability, and social risk and threat on the part of the inhabitants of that area or neighborhood in real-time (Rane et al., 2024, p. 1). However, despite their immense potential, such systems commonly fail to address or include another very important group: children.

Children are one of the most at-risk groups influenced by climate change, exposed to increased threats of illness, displacement, education disruption, and psychological trauma in the wake of climate-related disasters (Donger, 2022, p. 263; King et al., 2021, p. 892). However, children are still left out of planning and surveillance efforts for resilience. There are several implications of this in terms of the rights of children to participate in decisions that affect them, as specified in the UN Convention on the Rights of the Child (Kilkelly, 2020, p. 6). Another implication of this observation is that it is short-sighted on the part of those excluding them. Children have their own capacity for observation that can increase the efficiency of surveillance systems. In this paper, the nexus between climate resilience and community security will be thoroughly discussed in relation to the need for intentional involvement of children within community security initiatives in their neighborhoods.

In line with ecological resilience theory and frameworks for community security and incorporating rights of children, this analysis seeks to illustrate that irrespective of the need for increased resilience adaptability and availability of intergenerational perspectives on coping and responding to climate change, children can play an active role in achieving this process instead of just acting as spectators of climate change. Children can be made active participants in effecting change within their communities and as such can contribute towards making their communities more resilient to climate change.

MAIN TEXT

Theoretical Framework

To be effective in making the case for the integration of children in neighborhood surveillance systems in relation to making them an essential aspect of climate change resilience measures, this presentation must be informed by relevant theoretical perspectives. There are three main paradigms that this work will be informed by (a) Resilience theory in ecology, (b) Participatory security, and rights and agency of the child.

Resilience theory in ecology, conceptualized in 1973 by C.S. Holling, describes resilience as the capacity of a system to tolerate and adapt to change while preserving its structure and function (Biggs et al., 2021, p. 3). During climate change, this theory emphasizes the importance of adaptational approaches and methods that can allow communities to adapt to change in their environments. Resilience, in this case, means accepting change and finding methods of sticking to



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values despite that change (Dukiya & Benjamine, 2021, p. 11), making it evident that adding diversity in the form of inputs from children can be very helpful in this process of adaptation.

Participatory security signifies an approach that emphasizes community-based perspectives on security and surveillance, placing higher importance on community engagement rather than state-based policing or governance (Blair et al., 2021, p. 3446). Participatory security has shown special efficacy in informal settlements and areas that are especially susceptible to climate change effects, in which the state may be less present or altogether nonexistent. Inclusion of children in participatory security approaches aligns well with its community-based and inclusive philosophy, in which the special talents and insights of all members can be tapped.

The third framework, which is based on the rights and agency of the child, is grounded in the United Nations Convention on the Rights of the Child (Kilkelly, 2020, p. 11). International legislation codifies the right of children to participate in decisions that impact on their lives and position them as agents capable of making contributions towards community initiatives. Roger Hart’s “ladder of participation” further conceptualizes this issue, emphasizing progression from tokenistic levels of participation to partnership (Weckström et al., 2021, p. 6). In relation to building resilience for climate change and community surveillance, this framework emphasizes the need for children to be included in decision-making in the community (Roberts et al., 2020, p. 298).” Together, the three frameworks above constitute a comprehensive theoretical platform for the main argument of this thesis. They effectively illustrate that involving children in neighborhood surveillance is justified on several grounds and makes neighborhood-based climate change adaptation approaches more effective and sustainable.

Climate Change and Community Vulnerability

Climate change further aggravates pre-existing vulnerabilities in communities, especially in areas that are known to have poor infrastructure and are further exacerbated in areas of fragmented governance and large socioeconomic disparities. In many urban and peri-urban areas, especially in informal settlements, the community members are faced with everyday problems such as poor drainage, poor housing, poor access to clean drinking water, and poor electricity supply.

Examples of this can be seen in a slum in Dhaka, Bangladesh, that is flooded on a regular basis due to the absence of drainage facilities. Children in this area are particularly susceptible to diseases such as cholera and typhoid during the monsoon season due to contaminated drinking water (Rahaman et al., 2023, p. 5). Examples such as this demonstrate that climate change further increases the level of vulnerability of children.

Children are particularly at risk in this regard. They are particularly susceptible due to their physical, emotional, and mental developmental stages. For example, exposure to warmer temperatures and unsanitary conditions in sub-Saharan Africa has contributed to increased rates of water-borne diseases in children, resulting in hospitalizations and developmental problems (Hickman et al., 2021, p. e863). Floods can also damage housing and learning facilities for children, leaving them homeless and school-less. In addition, the psychological effects of climate-related disasters like stress, grief, and trauma can contribute to climate-related shocks’ enduring effects on children’s mental and social developments. In the wake of Typhoon Haiyan in the Philippines, many children have been observed



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to be suffering from Post-Traumatic Stress Disorder (PTSD), signifying the immense emotional effects of climate-related disasters on them (Labarda et al., 2020, p. 765).

In spite of such high risks, children are often left out of planning for climate change resilience. Planning for participatory meetings, surveillance, and preparedness in case of disasters is normally geared towards adult participants only, without much attention given to their views and needs. In informal settlements in Nairobi, for instance, children are normally left out in early warning systems despite their contributions as observers of changes in the environment (Cobbinah & Finn, 2023, p. 361; West et al., 2020, p. 2).

Further, the omission of children from resilience efforts solidifies the paternalistic mindset of children as dependents and fails to incorporate their capacity to be active participants within their communities when adequately prepared and trained. Children are considered stakeholders within the context of climate resilience and thus can help create adaptable and sustainable initiatives (Donger, 2022, p. 265; King et al., 2021, p. 892). Efforts that put children at the forefront of climate observation programs in Latin America are just some of the initiatives that can promote early warning systems and give children a sense of autonomy (Donger, 2022, p. 289). In conclusion, climate change increases the vulnerabilities of the community, yet it is the children who are worst affected. It is unethical and short-sighted to exclude children in the planning of resilience and adaptation. There is need for a paradigm shift in giving prominence to children in surveillance and in the adaptational responses of the community to climate change.

Neighborhood Security Surveillance: A Tool for Resilience

Neighborhood security surveillance has also flourished as an important grassroots approach for enhancing community preparedness and resilience in the face of climate change effects. Neighborhood security surveillance involves community participation in the surveillance of the environmental, infrastructure, and social hazards and responding to them in order to reduce any potential danger. Neighborhood surveillance takes different forms and may include watch groups, digital reporting systems, community patrols, and environmental surveillance. Neighborhood security surveillance is particularly important in areas that are highly susceptible to climate-related hazards and may lack access to state emergency services and infrastructure.

The strength of neighborhood surveillance lies in its reliance on local knowledge and collaboration. Neighbors act as the first observers of vital warning indicators such as blocked drainage channels, increased levels of water, deteriorated roads, or unusual weather patterns. For example, in Bangladesh, where flooding is a problem in certain areas, the community members monitor and notify authorities about blocked culverts, which are later cleared to reduce extensive flooding during the monsoons (Rahaman et al., 2023, p. 1). Early warning systems allow communities to put in proactive steps that can prevent or reduce the effects of disasters. Neighborhood surveillance programs also promote community building in that neighbors work together to secure their spaces. Neighbors' responsibility and concern for their areas of habitation can increase the capacity of the community members to adapt to climatic changes and build their confidence.

Despite this, many community-based surveillance systems are adult-focused and give little attention to the contributions of children. Children are in a unique position within their communities despite the often-overlooked potential that exists within them. Children spend considerable amounts of time



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in their environments, have extensive social networks, and are often aware of environmental subtleties that may escape the attention of adults. Children playing near a stream in Nigeria were able to note changes in the level of the stream and pollution within it that served as an early warning system for potential flooding and pollution of the stream (Hickman et al., 2021, p. e869). Social networks of children that include other children and school networks can be very effective at relaying vital messages.

By excluding children in the process of surveillance, the monitoring capacity is limited and the potential of fostering civic and environmental responsibility in early life is overlooked. Engaging children in surveillance programs can instill feelings of empowerment and responsibility that can be tapped into in later life for the betterment of civic life. Further, it may be an effective means of bridging the gap between different generations and inducing mutual respect and understanding between them. For instance, in a village in the Philippine Islands, child participation in environmental surveillance programs led to discussions between different generations on adaptation in relation to climatic change (Labarda et al., 2020, p. 765). Inclusion of children in community surveillance systems must be well conceptualized, considering training and supervision programs that are appropriate for children, for them to be involved in such systems in an ethical manner. Child involvement in community surveillance systems can be very effective in making such systems more effective and sustainable.

The Case for Children’s Inclusion

Inclusion of children in neighborhood surveillance systems can be thought of as both the right thing to do and an added advantage in building resistance to climate change within the community. Children are not just passive beneficiaries of protection by adults, but active participants in observing, communicating, and problem-solving within the community.

One of the main points in favor of involving them is their increased observation potential. Because of their mobility and willingness to explore, either in playing areas, on footpaths, or on their way to school, they can observe changes in the environmental setup that are sometimes missed by adults. For example, in Bangladesh, children playing on the coast were aware of warning symptoms of erosion and rising water levels due to environmental changes that put them and their parents at risk of flooding (Rahaman et al., 2023, p. 4). Children in Mumbai were also aware of possible flooding due to environmental changes in drainage pipes that children were monitoring.

Another advantage of involving children in such initiatives is that it helps in intergenerational learning. By participating in surveillance tasks, children get opportunities to discuss and engage with the elderly and their peers, which can lead to the acquisition of both indigenous and modern knowledge. In this case, for instance, children's observations about changes in weather conditions encouraged the elderly to share indigenous methods of agriculture, which helped in improving modern agriculture practices (Cobbinah & Finn, 2023, p. 366; West et al., 2020, p. 2). Children also use their digital acumen in such initiatives and share observations through storytelling applications or social media, which can contribute towards improving awareness within the community.

Being part of the surveillance process also enhances civic participation and empowerment. By taking active roles, children develop feelings of ownership and responsibility for the well-being of their communities. For instance, in Makoko, which is an informal settlement in Lagos, Nigeria, children



were trained to survey rainfall and drainage systems in their areas. Based on the findings, the communities prepared reports that helped in initiatives such as the removal of blocked canals and the improvement of defenses during flooding. By engaging the children in this process, apart from alleviating damage caused by flooding, the project helped in building the relationships between the authorities and citizens, evident in the effectiveness of youth participation in disaster risk reduction (Dukiya & Benjamine, 2021, p. 15; Obi et al., 2021, p. 3; Atanga, 2020, p. 1). In conclusion, engaging children in neighborhood surveillance can contribute to better environmental observation and the sharing of intergenerational knowledge, in addition to bolstering civic capacity. Contrary to posing a problem, children are valuable resources in this joint effort to promote and bolster climate resilience. However, harnessing these potential needs framework of ethics and sound partnerships.

Ethical and Practical Considerations

In incorporating children in neighborhood surveillance, several advantages are obtained, though it is vital to approach the aspect of participation carefully. Children are considered vulnerable groups, and any initiative of engaging them in community programs must be approached from that perspective.

Firstly, it is vital to principally protect kids from harm and risk. Observational work should never put them in danger of exposure to risky situations, aggressive contact, or child labor that can be exploitative. This may mean that children in areas in Bangladesh that are at risk of flooding should never be deployed to patrol or interact with potentially aggressive people in those areas. Rather, their contributions must be focused on safer and more constructive tasks like monitoring environmental conditions or attending community gatherings. A practical case in point would be an environmental observation project for kids in Indonesia, testing the quality of their water (Roberts et al., 2020, p. 300).

Training and supervision are also very important elements. Children need to be trained in an appropriate and age-specific manner about climate-related risks and hazards, as well as communication and safety practices. Trainings may be organized in collaboration with schools, associations for youth, or social bodies, and in collaboration and in consultation with the relevant authorities and NGOs. For example, in Kenya, there is training of students not only about climate change and making them capable of observing the weather of their area, under the supervision of teachers and village leaders (Cobbinah & Finn, 2023, p. 379; West et al., 2020, p. 2).

Informed consent and autonomy are given the same level of attention. Children must be free to participate voluntarily and must be informed about the nature of activities. Children must be encouraged to share their views and develop autonomy and make decisions to pull out of activities when they are uncomfortable. Children in activities can be encouraged to share their views and develop autonomy by making decisions to pull out when uncomfortable. For instance, in the coastal resilience project for children in the Philippines, children were able to participate voluntarily and were made aware of their rights to pause and withdraw from activities (Labarda et al., 2020, p. 765).

In addition, it is important that inclusivity and equity are pursued. Children in different social contexts, such as girls and those in special needs schools, must be included in surveillance efforts for the systems to capture the range of environmental conditions that children face. For example, children in Uganda were included in environmental surveillance to contribute to climate change adaptation in their communities (Hickman et al., 2021, p. e873).



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Partnerships are very important in promoting ethical inclusion. Schools can incorporate surveillance work in environmental education, NGOs can provide training and resources, and the local government can promote youth programs in their policies and financial allocations. In this way, a conducive environment for children that protects their rights and engages them in inclusion can be created. In conclusion, both practical and ethical factors act less as barriers and more as enablers of child participation. By focusing on their safety, informed participation, and inclusiveness, communities can create opportunities for children to contribute towards making their communities resilient to climate change.

CONCLUSION

Climate change is an issue that poses very dynamic and difficult challenges that call for collaborative and community-based responses. Neighborhood security surveillance systems have proved useful in building the capacity for resilience, especially in areas that lack proper infrastructure and access to emergency responses. However, such systems are made less effective when children are left out of them, given that children are very vulnerable yet have the capacity to contribute to building community-based resilience.

In this current discourse, it will be argued that the engagement of children in neighborhood surveillance systems is morally legitimate and prudent. From an ecological resilience framework, participatory security approach, and children rights tenets, the integration of children in surveillance systems can act as catalysts in observation and sharing of knowledge between different generations. For example, in Makoko, Nigeria, children were trained to monitor changes in weather and water levels, and this helped contribute to timely observations on flood control in this community (Dukiya & Benjamine, 2021, p. 24; Obi et al., 2021, p. 3; Atanga, 2020, p. 5).

Ethical and practical considerations must be utilized when integrating children into surveillance systems. Key considerations include the protection of children, gaining informed consent, and catering to children's developmental needs. Participation can be achieved in relation to training, supervision, and collaborations between institutions such as schools, NGOs, and local authorities.

For instance, in a community-based climate change monitoring project in Kenya, children were trained on environmental observation and safety, and adult supervision ensured that children remained protected and productively engaged (Cobbinah & Finn, 2023, p. 370; West et al., 2020, p. 2). Policy interventions, such as integrating climate change education in school programs or forming youth advisory committees, can create an enabling context for children to be sustainably and widely engaged in surveillance systems in the long run.

Improved resilience in the face of climate change needs to be achieved through changes in the attitudes of communities towards children. Children need to be seen and treated less as passive victims and more as active change makers. Children's perspectives and contributions are vital towards building adaptive and inclusive responses. For example, engaging children in community surveillance systems can instill in them environmental responsibility and civic values from childhood, imparting future generations with technical and leadership abilities in resilience. Considering increased climate change risks, the need to embrace resilient approaches that are inclusive in nature has become increasingly pressing. Children can be seen as vital partners in neighborhood monitoring



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and climate change adaptation. By involving children as such partners, it is possible to harness their potential as sources of innovation and optimism.

Policy Recommendations

To achieve the integration of children in neighborhood surveillance and climate change resilience programs, the following interventions are required. Children are encouraged to uphold ethical standards in contributing to decision-making.

- 1. Integrate child participation into local climate adaptation plans:** It is recommended that municipal and regional authorities incorporate children in frameworks concerning climate resilience. This includes recognizing children as stakeholders, allocating funds for their participation, and establishing ways for them to contribute to planning and decision-making sessions.
- 2. Develop training modules for child-friendly surveillance:** Collaboration between educational institutions and NGOs should provide training materials that are age-specific and educate children on climate risk, environmental monitoring, and safety. Children can be educated through school or extra-curricular programs.
- 3. Establish child advisory councils in community planning:** Local authorities can create youth councils that give advice on environmental and security issues. Youth councils are means by which children can express their concerns and contribute to decision-making processes on environmental and security issues.
- 4. Fund youth-led environmental monitoring initiatives:** It is important for both the private and public sectors to invest in initiatives that can empower children to lead surveillance and resilience efforts. Funding can be used for tools such as mobile apps, data collection kits, and workshops.
- 5. Collaborate with educational institutions to embed resilient education:** Schools are very important in determining the level of understanding that children have about climate change and civic responsibility. The inclusion of resilience education in the science and geography or social studies school programs is important for ensuring that children are equipped to effectively contribute to surveillance programs.
- 6. Monitor and evaluate child participation initiatives:** Governments and NGOs need to develop monitoring systems that can evaluate the effects and safety of programs of child participation. Results of child and community feedback must be used for improvement.

Recommendations of this nature are in line with international frameworks such as the Sendai Framework for Disaster Risk Reduction, the UN Sustainable Development Goals (SDGs), and the UN Convention on the Rights of the Child. Institutionalizing child participation will ensure that the systems in place are more responsive and resilient in order to create capacity for coping with challenges associated with climate change.

REFERENCES

- Abbass, K., Qasim, M.Z., Song, H., Murshed, M., Mahmood, H. & Younis, I. (2022). A review of the Global Climate change impacts, adaptation, and sustainable mitigation measures. *Environmental Science and Pollution Research* 29, 42539–42559. <https://doi.org/10.1007/s11356-022-19718-6>
- Atanga, R.A. (2020). The role of local community leaders in flood disaster risk management strategy making in Accra. *International journal of disaster risk reduction*, 43 (101358), p. 1-5.
- Biggs, R., Clements, H., de Vos, A., Folke, C., Manyani, A., Maciejewski, K., ... & Schlüter, M. (2021). What are social-ecological systems and social-ecological systems research?. In *The Routledge handbook of research methods for social-ecological systems* (pp. 3-26). Routledge.
- Blair, G., Weinstein, J.M., Christia, F., Arias, E., Badran, E., Blair, R.A., Cheema, A., Farooqui, A., Fetzer, T., Grossman, G. & Haim, D. (2021). Community policing does not build citizen trust in police or reduce crime in the Global South. *Science*, 374(6571), p.eabd3446.
- Cobbinah, P.B., & Finn, B.M. (2023). Planning and climate change in African cities: Informal urbanization and ‘Just’ Urban transformations. *Journal of planning literature*, 38(3), 361-379.
- Donger, E. (2022). Children and youth in strategic climate litigation: Advancing rights through legal argument and legal mobilization. *Transnational Environmental Law*, 11(2), 263-289.
- Dukiya, J.J., & Benjamine, O. (2021). Building resilience through local and international partnerships, Nigeria experiences. *International Journal of Disaster Risk Management*, 3(2), 11-24.
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R.E., Mayall, E.E., Wray, B., Mellor, C. & Van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. *The Lancet Planetary Health*, 5(12), e863-e873.
- Kilkelly, U. (2020). The UN convention on the rights of the child: Incremental and transformative approaches to legal implementation. In *Human Rights Monitoring and Implementation* (pp. 6-20). Routledge.
- King, A.C., Odunitan-Wayas, F.A., Chaudhury, M., Rubio, M.A., Baiocchi, M., Kolbe-Alexander, T., Montes, F., Banchoff, A., Sarmiento, O.L., Bälter, K. & Hinckson, E. (2021). Community-based approaches to reducing health inequities and fostering environmental justice through global youth-engaged citizen science. *International Journal of Environmental Research and Public Health*, 18(3), p.892.
- Labarda, C.E., Jopson, Q.D.Q., Hui, V.K.Y. and Chan, C.S. (2020). Long-term displacement associated with health and stress among survivors of Typhoon Haiyan. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(7), 765.
- Maja, M.M., & Ayano, S.F. (2021). The impact of population growth on natural resources and farmers’ capacity to adapt to climate change in low-income countries. *Earth Systems and Environment*, 5(2), 271-283.
- Obi, R., Nwachukwu, M.U., Okeke, D.C., & Jiburum, U. (2021). Indigenous flood control and management knowledge and flood disaster risk reduction in Nigeria's coastal communities: an empirical analysis. *International journal of disaster risk reduction*, 55(102079), p. 3.
- Rahaman, M.A., Kalam, A., & Al-Mamun, M. (2023). Unplanned urbanization and health risks of Dhaka City in Bangladesh: uncovering the associations between urban environment and public health. *Frontiers in public health*, 11 (1269362), 1-5.
- Rane, N., Choudhary, S., & Rane, J. (2024). Artificial intelligence for enhancing resilience. *Journal of Applied Artificial Intelligence*, 5(2), 1-33.
- Roberts, A., Hinds, J., & Camic, P. M. (2020). Nature activities and wellbeing in children and young people: A systematic literature review. *Journal of Adventure Education and Outdoor Learning*, 20(4), 298-318.
- Seddon, N. (2022). Harnessing the potential of nature-based solutions for mitigating and adapting to climate change. *Science*, 376(6600), 1410-1416.
- Tate, E., Rahman, M.A., Emrich, C.T., & Sampson, C.C. (2021). Flood exposure and social vulnerability in the United States. *Natural Hazards*, 106(1), 435-457.
- Weckström, E., Lastikka, A. L., Karlsson, L., & Pöllänen, S. (2021). Enhancing a culture of participation in early childhood education and care through narrative activities and project-based practices. *Journal of Early Childhood Education Research*, 10(1), 6-32.
- West, S.E., Büker, P., Ashmore, M., Njoroge, G., Welden, N., Muhoza, C., Osano, P., Makau, J., Njoroge, P. and Apondo, W. (2020). Particulate matter pollution in an informal settlement in Nairobi: Using citizen science to make the invisible visible. *Applied Geography*, 114, (102133), 2.