

Disaster Risk Reduction through Community Participation: Enhancing Fire Prevention, Preparedness, and Emergency Response in Abuja, Nigeria

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ABSTRACT

Fire disasters remain a major urban hazard, causing significant loss of lives, property, livelihoods, and critical infrastructure, particularly in rapidly urbanising cities of developing countries. While advances in fire fighting technology and institutional response have improved emergency management, sustainable disaster risk reduction increasingly depends on active community participation in prevention, preparedness, and emergency response. This study examined the contribution of community participation to fire disaster risk reduction in Abuja, Nigeria. Specifically, it assessed the level of community awareness, identified socioeconomic factors influencing participation, and evaluated the effectiveness of existing fire risk reduction strategies. A mixed-methods approach was adopted, combining quantitative and qualitative data. Primary data were collected from 400 respondents through stratified random sampling, complemented by key informant interviews and focus group discussions. Quantitative data were analysed using descriptive and inferential statistics, while qualitative data were analysed thematically. The findings indicate that although awareness of fire safety initiatives is relatively moderate, participation in fire prevention, preparedness programmes, and community fire safety activities remains low. Educational attainment, household income, access to fire safety information, institutional trust, and previous fire experience significantly influenced participation. The study further found that current fire risk reduction efforts remain largely institutional and enforcement-driven, with limited community ownership and collaborative decision-making. It concludes that strengthening urban resilience requires a shift from reactive fire suppression to participatory disaster risk governance based on community empowerment. The study recommends institutionalising community fire safety committees, expanding public education, strengthening partnerships between emergency agencies and communities, and promoting inclusive disaster governance in line with the Sendai Framework for Disaster Risk Reduction (2015–2030). These findings contribute to the growing evidence supporting community-centred approaches to sustainable urban disaster risk reduction.

KEYWORDS

Disaster Risk Reduction, Community Participation, Fire Prevention, Emergency Preparedness, Emergency Response, Urban Resilience, Fire Safety, Abuja

I. INTRODUCTION

Disasters continue to threaten sustainable urban development by undermining economic growth, environmental sustainability, and human security. The increasing frequency and intensity of natural and human-induced disasters have strengthened the need for proactive approaches that prioritise prevention alongside emergency response. Among these hazards, fire disasters remain frequent and destructive in urban areas, causing significant loss of lives, property, and critical infrastructure. Their impacts are particularly severe in developing countries, where rapid urbanisation, weak regulatory enforcement, informal settlements, inadequate infrastructure, and limited public awareness increase community vulnerability.

Over the past three decades, disaster management has shifted from a predominantly reactive approach centred on emergency response and post-disaster recovery towards disaster risk reduction (DRR), which emphasises prevention, preparedness, mitigation, and resilience. The Hyogo Framework for Action (2005–2015) and the Sendai Framework for Disaster Risk Reduction (2015–2030) reflect this transition by promoting comprehensive strategies for reducing disaster risks. The Sendai Framework identifies understanding disaster risk, strengthening disaster governance, investing in resilience, and enhancing preparedness for effective response as its four priorities. A central principle is that local communities should not be regarded merely as victims but as active partners in disaster prevention, preparedness, response, and recovery. Their contextual knowledge, social networks, and indigenous coping mechanisms can strengthen disaster resilience and improve the effectiveness of risk reduction initiatives.

Fire disaster risk reduction particularly reflects this preventive orientation. Although professional fire fighting services remain essential, effective fire safety also depends on community preparedness and participation. Communities with adequate fire safety knowledge, early warning systems, emergency drills, and effective collaboration with emergency agencies are better positioned to identify hazards, report incidents promptly, evacuate safely, and reduce casualties and property losses. Community participation consequently strengthens social cohesion, promotes safer behaviour, and enhances collective capacity to manage fire risks.

Urban centres in sub-Saharan Africa face considerable fire disaster management challenges arising from rapid population growth, unplanned urbanisation, weak enforcement of building regulations, unreliable electricity, unsafe cooking practices, overcrowded markets, and expanding industrial activities. Nigeria reflects these challenges, with recurrent fire outbreaks in residential, commercial, educational, healthcare, and industrial facilities causing substantial socioeconomic losses. Major incidents in cities such as Lagos, Kano, Onitsha, Port Harcourt, and Abuja demonstrate that reactive fire fighting alone is insufficient for addressing increasingly complex urban fire risks.

Since becoming Nigeria's capital, Abuja has experienced rapid urbanisation associated with population growth, infrastructure development, rural–urban migration, and the expansion of formal and informal settlements. Although the Federal Capital Territory Fire Service has strengthened its capacity through additional fire stations, improved equipment, public awareness campaigns, and emergency response initiatives, fire outbreaks continue to occur

across residential areas, markets, commercial centres, construction sites, and peri-urban communities. This persistence indicates gaps in prevention, preparedness, public awareness, and community ownership of fire safety.

Contemporary disaster scholarship increasingly emphasises collaborative governance as essential to building resilient cities. Effective disaster risk reduction requires cooperation among government institutions, emergency agencies, private organisations, civil society, and local communities in identifying risks, promoting preparedness, and coordinating emergency response. Community participation therefore constitutes both a governance mechanism and a resilience-building strategy. It extends beyond attendance at awareness campaigns to include hazard identification, risk communication, disaster planning, emergency drills, volunteer activities, neighbourhood surveillance, policy development, and post-disaster recovery. Arnstein's Ladder of Citizen Participation emphasises shared decision-making and community empowerment, while Social Capital Theory highlights trust, social networks, and collective action as important foundations of disaster resilience.

Despite the growing recognition of participatory disaster management, empirical evidence on community participation in fire disaster risk reduction in Abuja remains limited. Existing interventions have concentrated largely on institutional preparedness, fire fighting capacity, regulatory enforcement, and emergency response, with comparatively less attention to community involvement in prevention and preparedness. Furthermore, socioeconomic and contextual factors, including education, socioeconomic status, access to information, cultural perceptions, and institutional trust, may influence participation but remain insufficiently examined within the Abuja context.

Addressing this gap is important because contemporary disaster management increasingly places resilience and inclusive governance at the centre of sustainable urban development. Sustainable Development Goal 11 advocates making cities inclusive, safe, resilient, and sustainable, while the Sendai Framework promotes inclusive participation of stakeholders in disaster risk reduction. Against this background, this study investigates the role of community participation in disaster risk reduction through fire prevention, preparedness, and emergency response in Abuja, Nigeria. Specifically, it examines community awareness of fire risk reduction initiatives, analyses the socioeconomic factors influencing participation in fire safety activities, and evaluates the effectiveness of institutional strategies for promoting community engagement. By positioning fire safety within the broader framework of disaster risk reduction, the study provides evidence for strengthening community resilience, informing policy reforms, and advancing participatory approaches to urban disaster governance in Nigeria and other rapidly urbanising cities facing similar fire risks.

II. LITERATURE REVIEW

A. *Disaster Risk Reduction: Concept and Evolution*

Disaster Risk Reduction (DRR) has evolved from a traditional emphasis on emergency response towards a proactive and integrated approach aimed at reducing vulnerabilities before disasters occur. The United Nations Office for Disaster Risk Reduction (UNDRR) conceptualises DRR as a systematic process of identifying, assessing, and reducing disaster

risks through coordinated policies, institutional frameworks, public awareness, and community participation. The contemporary DRR paradigm recognises that disasters result from the interaction between hazards and societal vulnerabilities; consequently, reducing exposure, strengthening preparedness, enhancing institutional capacity, and empowering communities are central to minimising disaster losses.

The Hyogo Framework for Action (2005–2015) represented an important shift towards resilience-based disaster management by integrating disaster risk considerations into development planning. The Sendai Framework for Disaster Risk Reduction (2015–2030) further strengthened this approach through four priorities: understanding disaster risk, strengthening disaster risk governance, investing in resilience, and enhancing preparedness for effective response. It also promotes the principle of “Build Back Better” during recovery and reconstruction and recognises communities as essential stakeholders in achieving resilient societies.

DRR is particularly important in urban areas because rapid urbanisation, population growth, environmental degradation, climate variability, and infrastructure expansion increase exposure to hazards. Fire disasters illustrate this vulnerability, as many urban fires arise from preventable factors such as electrical faults, unsafe cooking practices, industrial accidents, poor building maintenance, and non-compliance with safety regulations. Effective DRR therefore requires a combination of engineering measures, governance reforms, public education, institutional cooperation, and community participation. Cutter et al. (2008) emphasise that resilient communities possess social, institutional, economic, infrastructural, and environmental capacities that enable them to anticipate, withstand, recover from, and adapt to disasters. Similarly, Wisner et al. (2004), through the Pressure and Release (PAR) model, demonstrate that disasters are intensified by underlying socioeconomic inequalities, governance failures, and limited access to resources. Thus, effective risk reduction must address both physical hazards and the social conditions that create vulnerability.

In fire disaster management, this paradigm has shifted attention from fire fighting equipment and emergency response towards prevention and preparedness. Prevention seeks to reduce the likelihood of fire through education, legislation, inspections, and behavioural change; preparedness develops the capacity of individuals, institutions, and communities to respond effectively; response focuses on immediate actions to minimise losses; and recovery restores normalcy while strengthening resilience against future disasters. For rapidly urbanising cities such as Abuja, institutional fire fighting capacity alone is insufficient. Sustainable fire safety requires communities to participate actively in hazard identification, prevention, preparedness, and emergency response.

B. Community Participation in Disaster Risk Reduction

Community participation involves the active engagement of individuals, households, and community organisations in planning, implementing, and evaluating disaster management initiatives. Communities contribute local knowledge, support preparedness, and frequently serve as first responders before professional emergency services arrive. Pretty (1995) explains participation as ranging from passive involvement to self-mobilisation, while Arnstein's (1969) *Ladder of Citizen Participation* emphasises partnership, delegated authority, and citizen control as higher forms of meaningful participation.

Active participation improves hazard identification, risk communication, fire-safe behaviour, social capital, and shared responsibility between citizens and emergency agencies. However, participation may be constrained by low educational attainment, poverty, inadequate communication, weak institutional trust, and cultural beliefs. Consequently, DRR policies must address these socioeconomic and institutional barriers to achieve meaningful and sustainable community engagement.

C. Fire Prevention, Preparedness and Emergency Response

Fire disaster management comprises three interconnected components: prevention, preparedness, and emergency response. Fire prevention involves measures designed to eliminate or minimise ignition sources, including enforcement of building regulations, electrical inspections, fire detection systems, public education, and safe storage of combustible materials, equipment maintenance, and fire-resistant construction. Urban planning also contributes through adequate road networks, appropriate zoning, building spacing, reliable water supplies, hydrants, and compliance with building codes.

Fire preparedness refers to activities undertaken before emergencies to strengthen response capacity. These include emergency planning, evacuation procedures, simulation exercises, volunteer training, emergency communication systems, fire fighting equipment, and institutional coordination. Prepared communities are more likely to understand emergency procedures, identify evacuation routes, access emergency contacts, use basic safety equipment, and participate in drills. Preparedness extends beyond households to schools, markets, workplaces, religious institutions, and neighbourhood organisations, which can coordinate evacuation, disseminate information, provide temporary assistance, and support vulnerable groups.

Emergency response encompasses immediate actions taken during and shortly after fire incidents to protect lives, property, and infrastructure. These include fire reporting, evacuation, fire fighting, rescue, medical assistance, traffic management, relief coordination, and public information. Although professional fire services are central to response, community members often undertake critical initial actions, including reporting incidents, assisting evacuation, using portable extinguishers, rescuing vulnerable persons, controlling crowds, and providing first aid. Response effectiveness is strongly influenced by preparedness because trained communities generally demonstrate faster decision-making, better coordination, and more effective cooperation with emergency responders.

D. Factors Influencing Community Participation

Community participation in fire disaster risk reduction is influenced by interconnected socioeconomic, behavioural, and institutional factors. Education and income can improve awareness, access to safety resources, and preparedness, while age and gender may shape participation because of differences in experience, skills, and social responsibilities. Institutional trust encourages cooperation with emergency agencies, whereas access to fire services influences preparedness and confidence in emergency systems. Previous experience of fire disasters may also increase risk perception and motivate greater involvement. Understanding these factors is therefore essential for designing effective

interventions that strengthen community participation in fire prevention, preparedness, and emergency response in Abuja.

E. Theoretical Framework

This study is anchored on four complementary perspectives that explain community participation in disaster risk reduction. The Sendai Framework for Disaster Risk Reduction (2015–2030) provides the overarching policy framework, emphasising proactive risk reduction, inclusive governance, resilience, preparedness, and stakeholder participation. Its focus on community involvement directly supports the study's examination of fire prevention, preparedness, and emergency response in Abuja.

Arnstein's (1969) Ladder of Citizen Participation views participation as a continuum ranging from manipulation to citizen control and emphasises meaningful community involvement in decision-making. It therefore provides a basis for assessing whether Abuja residents merely receive fire safety information or actively influence risk reduction initiatives. Social Capital Theory, associated with Putnam (2000), highlights trust, social networks, reciprocity, and collective action as resources that facilitate information sharing, mutual assistance, volunteer mobilisation, and effective emergency response. Community-Based Disaster Risk Management (CBDRM) further emphasises local ownership, participatory risk assessment, capacity building, and the incorporation of community knowledge into disaster planning.

F. Empirical Review and Research Gap

Empirical studies indicate that community participation enhances disaster preparedness, resilience, and fire risk management. However, evidence from Africa and Nigeria remains comparatively limited, with existing studies focusing largely on fire incidence, institutional capacity, regulatory compliance, and fire fighting rather than community participation. Moreover, limited attention has been given to the combined influence of awareness, socioeconomic characteristics, institutional trust, and governance on fire prevention, preparedness, and emergency response. This study addresses these gaps by examining community participation in fire disaster risk reduction in Abuja through a mixed-methods approach, thereby generating evidence for strengthening participatory and community-centred fire safety policies.

III. MATERIALS AND METHODS

A. Study Area

The study was conducted in Abuja, Federal Capital Territory (FCT), and Nigeria, established in 1976 as the nation's capital. The FCT covers approximately 7,315 km² and comprises six Area Councils: Abuja Municipal Area Council (AMAC), Bwari, Gwagwalada, Kuje, Kwali, and Abaji. Abuja has experienced rapid urbanisation driven by population growth, rural–urban migration, economic development, and infrastructural expansion. Its diverse settlement patterns, including planned residential districts, commercial centres, peri-urban communities, and informal settlements, create varying levels of fire risk and access to

emergency services. These characteristics make Abuja an appropriate setting for examining community participation in fire disaster risk reduction.

B. Research Design

The study adopted a mixed-methods research design, combining quantitative and qualitative approaches to obtain a comprehensive understanding of community participation in fire disaster risk reduction. The quantitative component measured awareness, participation, preparedness, and socioeconomic factors, while the qualitative component explored community experiences, perceptions, institutional relationships, and barriers to participation. The integration of both approaches enhanced methodological triangulation and provided a broader understanding of fire prevention, preparedness, and emergency response.

C. Population and Sampling Procedure

The target population comprised adult residents of the Federal Capital Territory. Based on the 2006 National Population Census and an annual population growth rate of 2.5%, the estimated population for 2024 was approximately 2,141,285 persons. A multistage sampling procedure was employed to ensure representation of communities with different geographical and socioeconomic characteristics. Selected communities were stratified, after which respondents were selected through stratified random sampling. Purposive sampling was used to select key informants with relevant expertise in fire safety, emergency management, and community mobilisation.

The sample size was determined using Cochran's (1977) formula for large populations at a 95% confidence level and 5% margin of error, producing a minimum of 384 respondents. This was increased to 400 respondents to improve reliability and accommodate possible non-response. In addition, key informant interviews and focus group discussions were conducted with fire service officials, community leaders, emergency management stakeholders, and community residents.

D. Data Collection

Primary data were collected using structured questionnaires, semi-structured interviews, and focus group discussions. The questionnaire examined awareness of fire risk reduction initiatives, participation in prevention and preparedness activities, emergency response involvement, perceptions of institutional strategies, and relevant socioeconomic characteristics. Qualitative methods explored community perceptions of fire hazards, institutional collaboration, barriers to participation, coping practices, and strategies for strengthening fire disaster resilience. Secondary data were obtained from scholarly publications, government reports, policy documents, fire safety regulations, and relevant disaster management frameworks.

E. Variables and Measurement

The dependent variable was community participation in disaster risk reduction, measured through involvement in fire prevention campaigns, preparedness activities, community fire

safety programmes, volunteer initiatives, awareness programmes, and emergency response activities. Independent variables included educational attainment, household income, age, gender, occupation, previous fire experience, awareness of fire safety programmes, institutional trust, accessibility to emergency services, and availability of fire safety resources. Indicators included awareness levels, participation in drills, volunteerism, and knowledge of fire safety, institutional support, and accessibility to emergency infrastructure.

F. Data Analysis

Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS). Frequencies, percentages, means, and standard deviations were used to summarise the data, while Chi-square and regression analysis were employed to examine relationships between relevant socioeconomic and institutional factors and community participation. Statistical significance was assessed at the 5% level. Qualitative data from interviews and focus group discussions were transcribed and analysed thematically through systematic coding, categorisation, and interpretation. The integration of quantitative and qualitative findings strengthened the interpretation of the results.

G. Validity, Reliability and Ethical Considerations

Content validity was enhanced through an extensive review of relevant literature and alignment of questionnaire items with the study objectives. The instrument was reviewed by experts in disaster management, urban planning, and fire safety, while pilot testing was conducted to identify and correct ambiguous or unclear items. Standardised procedures were also followed during data collection.

Ethical principles were observed throughout the study. Participation was voluntary, informed consent was obtained, and respondents were assured of confidentiality and anonymity. Personal identifiers were excluded from the dataset, and participants were informed that the information collected would be used solely for academic purposes and that they could withdraw from the study without adverse consequences.

IV. RESULTS AND DISCUSSION

A. Overview of Findings

The study examined community participation in fire disaster risk reduction in Abuja, focusing on awareness, prevention, preparedness, emergency response, socioeconomic determinants, and the effectiveness of existing institutional strategies. The findings indicate that awareness of fire safety is moderate, but active and sustained community participation remains low. This suggests that fire risk reduction in Abuja continues to depend largely on institutional intervention rather than community-driven action.

B. Community Awareness and Participation

The findings show that 20% of respondents had excellent knowledge of fire risk reduction, while 30% had good knowledge. A further 25% demonstrated moderate knowledge, 17.5%

had low knowledge, and 7.5% had poor knowledge. Thus, although public awareness exists, a substantial proportion of residents lack sufficient knowledge for effective fire prevention and emergency preparedness.

Table 1: Level of Community Awareness of Fire Risk Reduction

Awareness Level	Percentage
Excellent	20%
Good	30%
Moderate	25%
Low	17.5%
Poor	7.5%

Despite this moderate level of awareness, participation in practical preparedness activities remained limited. Only 20% of respondents reported high participation in fire drills, while 25% frequently attended fire safety meetings. Approximately 50% reported low or very low participation. Similarly, only 22.5% were highly active in community fire safety programmes, while 27.5% participated occasionally, 30% rarely participated, and 20% reported no participation.

Table 2: Community Involvement in Fire Safety Programmes

Level of Participation	Percentage
Highly active	22.5%
Occasional	27.5%
Rarely	30%
None	20%

These results demonstrate an important gap between knowing about fire safety and actively participating in it. The finding supports McCaffrey et al. (2018), Paveglio et al. (2020), and Paton and Tedim (2021), who emphasise that sustained community engagement and continuous preparedness are important for reducing disaster vulnerability.

C. *Volunteerism and Community Ownership*

Community volunteerism was also found to be weak. Only 20% of respondents reported active participation in volunteer fire safety initiatives, while more than half indicated no involvement. This suggests that many residents still perceive fire management primarily as the responsibility of government agencies. Weak volunteerism limits neighbourhood-level early warning, peer education, rapid assistance, and community-based response.

The finding supports Paton and McCaffrey (2018), who identify volunteerism as an important mechanism for strengthening social cohesion and local response capacity. It also reinforces the need for structured community volunteer programmes that complement, rather than replace, professional fire services.

D. Socioeconomic and Institutional Factors

The study found that education, household income, access to information, institutional trust, cultural perceptions, and accessibility to emergency services influenced community participation. Education was particularly important because more educated residents demonstrated greater understanding of fire hazards and emergency procedures. Income also affected participation, as households with greater financial resources were better able to obtain fire safety equipment and maintain safer electrical installations.

Institutional trust was another important factor. Residents who expressed greater confidence in emergency agencies were more willing to participate in fire safety activities, whereas limited trust reduced cooperation. These findings are consistent with Harrison et al. (2021), Allen et al. (2020), and Jakes and Langer (2018), who identify socioeconomic conditions, education, institutional confidence, and social attitudes as important influences on disaster preparedness.

E. Effectiveness of Existing Fire Risk Reduction Strategies

Existing strategies, including public awareness campaigns, educational programmes, community meetings, partnerships, and fire drills, have contributed to improving awareness but have not generated widespread and sustained community participation. Their coverage also appears uneven across communities.

The findings therefore suggest that current fire risk reduction efforts remain largely institution-centred and reactive. In line with the Sendai Framework, greater emphasis should be placed on inclusive governance, continuous community engagement, preparedness, and shared responsibility.

F. Discussion of Key Findings

The central finding of the study is that awareness does not automatically translate into participation. Although half of the respondents demonstrated good or excellent knowledge of fire risk reduction, participation in drills, meetings, organised safety programmes, and volunteer activities remained comparatively low. This indicates that knowledge is necessary but insufficient for sustained community engagement.

The results further show that participation is shaped by socioeconomic and institutional conditions. Education and income influence residents' capacity to adopt preventive measures, while institutional trust affects willingness to cooperate with emergency agencies. Consequently, improving fire safety in Abuja requires interventions that address not only knowledge deficiencies but also socioeconomic barriers, institutional relationships, and opportunities for meaningful participation.

Overall, the findings demonstrate that sustainable fire disaster risk reduction in Abuja requires a shift from periodic awareness campaigns to continuous, community-centred engagement. Neighbourhood associations, schools, religious institutions, markets, youth organisations, and community volunteers should be incorporated into fire prevention, preparedness, and emergency response programmes. Such an approach would strengthen

local resilience, improve cooperation with emergency agencies, and reduce dependence on institutional response alone.

V. CONCLUSION

This study found that while fire safety awareness initiatives in Abuja have improved public knowledge, community participation in fire prevention, preparedness, and emergency response remains inadequate. Moderate awareness has not translated into active involvement in fire drills, volunteer programmes, or other preparedness activities, limiting the development of resilient communities.

The findings further revealed that community participation is shaped by socioeconomic, institutional, and behavioural factors, including education, income, and access to fire safety information, institutional trust, and previous disaster experience. This indicates that effective disaster risk reduction requires more than awareness campaigns; it demands supportive policies, sustained community engagement, and enabling socioeconomic conditions.

The study also showed that current fire risk reduction efforts are largely institution-driven and reactive, with limited opportunities for communities to share responsibility for fire safety. In line with the Sendai Framework for Disaster Risk Reduction (2015–2030), strengthening disaster governance requires institutionalising community participation as a central element of fire safety policy. Sustainable fire disaster risk reduction in Abuja therefore depends on empowering communities to actively participate in prevention, preparedness, emergency response, and recovery. By providing empirical evidence from Abuja, this study contributes to the growing body of knowledge on community-centred disaster risk reduction and offers practical insights for policymakers, emergency managers, urban planners, and other stakeholders working to build more resilient cities.

VI. POLICY RECOMMENDATIONS

Based on the findings of this study, the following policy recommendations are proposed to strengthen community participation in fire disaster risk reduction in Abuja.

A. *Institutionalise Community-Based Fire Safety Committees*

Government should establish legally recognised Community Fire Safety Committees in every district, estate, market, and neighbourhood within the Federal Capital Territory. These committees should work collaboratively with the FCT Fire Service in conducting hazard identification, organising community awareness programmes, coordinating local preparedness activities, and supporting emergency response operations.

B. *Expand Public Fire Safety Education*

Fire safety education should become a continuous public enlightenment programme rather than an occasional campaign. Modern communication platforms—including social media,

community radio, television, mobile applications, schools, religious institutions, markets, and workplaces—should be utilised to disseminate simplified fire prevention messages throughout the year.

Educational materials should be adapted to local languages and cultural contexts to improve accessibility and public understanding.

C. Integrate Fire Preparedness into Community Activities

Rather than organising isolated fire drills, emergency preparedness should be incorporated into existing community activities such as town hall meetings, market association gatherings, religious programmes, school activities, and neighbourhood development associations.

Regular simulation exercises should be conducted to familiarise residents with evacuation procedures, emergency communication protocols, and first-response techniques.

D. Establish Community Volunteer Fire Response Networks

Community volunteer programmes should be formally established across Abuja to complement the operational capacity of the FCT Fire Service.

Volunteers should receive periodic training in:

- basic fire fighting
- first aid
- emergency evacuation
- fire prevention
- hazard reporting and
- disaster communication

Recognition programmes, certifications, insurance coverage, and modest incentives should be introduced to sustain volunteer participation.

E. Strengthen Collaborative Disaster Governance

Fire disaster management should adopt a multi-stakeholder governance framework involving:

- Federal Capital Territory Fire Service;
- Federal Emergency Management Agency;
- Area Councils;
- traditional institutions;
- resident associations;
- educational institutions;
- private organisations;
- non-governmental organisations; and
- Professional bodies.

Such collaboration would facilitate information sharing, resource mobilisation, and coordinated disaster preparedness.

F. Improve Access to Fire Safety Resources

Government should improve equitable access to fire safety infrastructure by increasing the distribution of:

- public fire hydrants;
- community fire extinguishers;
- emergency water supply points;
- emergency communication systems; and
- Strategically located fire stations.

Communities located farther from existing fire stations should receive priority attention because delayed response significantly increases fire losses.

G. Mainstream Disaster Risk Reduction into Urban Planning

Fire risk reduction should be integrated into land-use planning, housing development, infrastructure provision, environmental management, and building approval processes.

Urban planners should ensure adequate road access for emergency vehicles, enforce building setbacks, improve water supply systems, and strengthen compliance with fire safety regulations during physical development.

H. Strengthen Fire Safety Legislation

Existing fire safety regulations should be reviewed to provide stronger legal backing for:

- mandatory fire risk assessments;
- periodic fire safety inspections;
- compulsory fire drills in public buildings;
- installation and maintenance of fire fighting equipment;
- community preparedness programmes; and
- Penalties for non-compliance.

Legislation should also provide mechanisms for encouraging community participation rather than focusing exclusively on enforcement.

I. Enhance Research and Data Management

Government agencies and academic institutions should collaborate to establish a comprehensive fire incident database for Abuja.

Reliable data on fire causes, spatial distribution, response times, casualties, economic losses, and community preparedness will facilitate evidence-based policymaking and continuous improvement of disaster risk reduction strategies.

J. *Promote Community Ownership of Disaster Risk Reduction*

Ultimately, sustainable disaster resilience requires changing public perception from viewing fire safety as solely a government responsibility to recognising it as a shared civic responsibility.

Community ownership can be strengthened through participatory planning, inclusive decision-making, local leadership development, volunteerism, and continuous engagement of residents in all phases of disaster management.

VII. CONTRIBUTION TO KNOWLEDGE

This study contributes to disaster risk reduction scholarship by empirically demonstrating that community participation significantly influences the effectiveness of fire prevention, preparedness, and emergency response in Abuja. Unlike previous studies that concentrated primarily on institutional fire fighting capacity, this research integrates disaster risk reduction theory, participatory governance, and urban resilience to propose a comprehensive community-centred framework for fire disaster management.

The study further extends the application of the Sendai Framework within the Nigerian urban context and provides evidence that strengthening community participation is essential for achieving Sustainable Development Goal 11 on inclusive, safe, resilient, and sustainable cities.

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