

Post Disaster Housing Reconstruction in Lokoja-Nigeria: Major Problems Experienced and the Way Forward

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There is an observable increase in the frequency of natural disasters (floods) in recent times and the appalling nature of destruction emanating from natural disasters on housing has become a global concern and is putting everyone on their feet to find out strategy to enhance the efficiency and effectiveness of post disaster undertakings. Housing reconstruction which is supposed to give succour to the disaster affected people often fail due to some issues. This study considered the major issues that are peculiar to the Post Disaster Housing Reconstruction (PDHR) settings in the study area since each setting is confronted with different impediments. This was done through a self-administration of structured questionnaires to 257 flood victims directly or indirectly involved in the reconstruction projects. Findings indicated unethical conducts of professionals and non-engagement of beneficiaries or communities during reconstruction. These indicators are threats to the success of PDHR projects. Therefore, offering beneficiaries the opportunity to meaningfully contribute in reconstruction affairs that is to shape their lives in terms of housing and livelihoods, will in no small level minimize problems experienced in PDHR. This will deliver a more sustainable and resilient PDHR development where satisfaction and acceptability of the project will be evident, and the donor will have value for his money.

Keywords: Floods impact, PDHR projects, community involvement, sustainable strategy, Lokoja-Nigeria

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INTRODUCTION

Natural disasters in recent times, occur more frequent and it is causing damage, losses, and disturbance to lives, built and social assets, and economy across the globe. Natural hazards caused disasters such as floods, earthquake, and drought are a central global predicament (Benson *et al.*, 2001; Adaji, 2021), and about 250 natural and 125 human-made disasters occur each year (Alexander, 2004; Adaji, 2019; Adaji *et al.*, 2023). Recent years, a series of universal disasters hit numerous parts of the globe, which posed challenges to the existing risk reduction, and management that was in place (Malalgoda *et al.*, 2014). Indian Ocean tsunami in 2004, hurricane Katrina in 2005, Haiti earthquake in 2010, New Zealand earthquake in 2010, Japan earthquake and tsunami in 2011, Typhoon Haiyan in 2013, Nigeria floods in 2012, 2018 and 2022, Malaysia floods in 2014 and 2022, are some of the foremost tragic disasters over the past decade, which caused overwhelming and long-term impacts to the affected nations and the entire world (Adaji *et al.*, 2023).

Developing countries tend to endure the pain of the impact of disasters, with the poor in these countries often being the most severely affected (Schilderman, 2004; Adaji, 2019; Adaji *et al.*, 2021). Developing countries also experienced the highest figures of deaths and people affected by the flooding disasters (Ahmed, 2011). Predominantly in developing countries, the effect of disasters on the built environment is much greater compared to developed countries, estimated at more than 20 times in magnitude (Barakat, 2003; Goswami *et al.*, 2018). Housing is usually viewed to be the most valuable asset for people in developing countries. In any flooding, houses are principally the component that is most extensively damaged, and repeatedly represent the greatest portion of the loss in the overall impact of a disaster on the national economy (Lyons, 2009; Adaji, 2019; Adaji *et al.*, 2021). For example, Roosli *et al.* (2015) reported that during 2014, flooding in Malaysia, housing was the sector that experienced extreme damage. In an attempt to describe the precise scenario of the 2014 floods in Malaysia, Mohamed *et al.* (2017)

expressed that it is not out of place for one to say that the speed of the flood water in the affected regions flowed so fast with vitality equivalent to that of Tsunami, displacing anything that obstructs its channel of flow including buildings (residential and non-residential houses) and other infrastructures.

Similarly, Richard *et al.* (2017) and Jinadu (2015) reported that Nigeria is not excluded from the flood devastation on housing. In October 2012, a flood devastated some States in Nigeria that included Kogi. The flood of 2012 is considered as the worst since Nigeria became independent in 1960 (Adaji, 2019). The discovery of the Post-Disaster Needs Assessment (PDNA) conducted immediately after the floods showed that 11 States were ravaged by the floods (see Table 1). The experience of the 2012 floods cannot be forgotten in a hurry since the effects are overwhelming and always fresh in the minds of the victims as well as the Federal government of Nigeria (Adaji *et al.*, 2023). In Kogi State alone, more than 500 thousand people were displaced; nine out of the 21 local government areas were affected by the flood, including Lokoja the State headquarters (NEMA, 2013).

Table 1 shows that Nigeria in general, and Kogi State in particular, may be on the watch list of natural disaster-prone settlements. It further discloses the vulnerability

of Kogi State poorer residents to disasters as a result of the lesser capacity and fewer resources to prepare and recover. The life-threatening physical and socio-economic shocks of 2012 floods became a crucial matter of interest among stakeholders in disaster management where safe actions on victims' rehabilitation, recovery and risk vulnerability reduction were swiftly taken to mitigate flooding impacts in the future. However, the implementation of some of the resolutions was incompetently done due to corruption manifesting through the diversion of resources for personal interests (Jinadu, 2015). The consequences of poor implementation are leaving the affected population vulnerable to the menace of flooding now and in the future. This record among others supports the justification for conducting this research with the year 2012 flood as a central focus to bring long term respite to the residents by developing strategies that will offer a disaster resilience community in the study area and other similar communities. Housing reconstruction is a crucial element of post-disaster recovery initiatives in developing countries, and thus, the need arises to recognise what approach makes it effective or achievable in the aftermath of disasters (Lyon, 2009; Adaji, 2019).

Table 1: Number of totally and partially destroyed houses by 2012 floods in the most affected states in Nigeria

State	Traditional buildings			Modern/Sandcrete buildings			Total number affected
	Number totally destroyed	Number partially damaged	Total number affected	Number totally destroyed	Number partially damaged	Total number affected	
Adamawa	117,829	36,134	153,963	-	23,401	23,401	177,364
Anambra	16,186	6,719	22,905	-	95,394	95,394	118,299
Bayelsa	79,730	26,577	106,307	-	26,577	26,577	132,884
Delta	79,834	4,465	89,299	-	-	-	89,299
Edo	13,153	14,249	27,402	-	-	-	27,402
Jigawa	11,623	5,230	16,853	-	282	282	17,135
Kebbi	103,048	52,555	155,603	-	-	-	155,603
Kogi	124,085	3,102	127,187	-	16,259	16,259	143,446
Nasarawa	16,326	136,049	152,375	-	5,759	5,759	158,134
Rivers	36,999	4,111	41,110	10,121	192,290	202,411	243,521
Taraba	81,688	32,675	114,363	-	-	-	114,363
Total	685,501	321,866	1,007,367	10,121	359,962	370,083	1,377,450

Source: NEMA (2013)

Post-disaster housing reconstruction (PDHR) are obviously multifaceted, undefined, multi-stage and affect multiple actors and agencies (Darabi *et al.*, 2013). The process is multifaceted because it requires different talents, qualities and stages. Adaji (2019) reported that the efforts to reconstructing houses for the beneficiaries in the event of floods have not yielded the desired result. Since survivors in the flood-impacted areas are left confronting the significant challenges of recovering

from disaster. Increased complexities and uncertainties in a post-disaster environment mean that delivery of housing is more difficult than it is for conventional projects. As such, the techniques in which housing and resources are gotten may not be able to cope with challenges posed by the major disaster recovery (Jha *et al.*, 2010). The unavailability of local human resources at all stages to facilitate the management of post-disaster housing reconstruction and the sustainability of

reconstruction projects is a principal challenge or bottleneck faced by several housing reconstruction projects (Adaji *et al.*, 2023). This study reported PDHR in Lokoja from the perspective of the flood victims in those areas because Sadiqi *et al.* (2012) established that most of the time, emergency relief efforts are usually seen as being successful, but the same cannot be said of PDHR projects because they often fail to meet the set objectives. Hence answer was sought to the following research question: What are the major difficulties experienced in PDHR in the study area?

To successfully solve these problems, community participation is progressively being sought (Adaji *et al.*, 2021). The contribution of disaster-affected

LITERATURE REVIEW

Impacts of Disaster

The occurrence of natural disasters are more frequent nowadays and it is causing damage, losses, and disturbance to lives, built and social assets, and economy worldwide. Disasters usually destroy houses and claim many human lives; the lucky survivors in a disaster-affected location often opt not to leave their residences or home region (Baldry and Thurairajah, 2010). Hence, the requisite for reconstruction arises and may possibly provide the opportunity to build back better (Labadie, 2008; Mannakkara and Wilkinson, 2013). Because of the peculiarities attached to PDHR as being more complex, dynamic and unpredictable, there is a need for stakeholders to focus more interest on development. Davis (2014) and Adaji (2019) indicated that the 21st Century is emerging to be more stakeholder focussed. Quite several research work have recognised the importance of effective stakeholder engagement in reconstruction project (Yang *et al.*, 2009; Shafique and Warren, 2015; Adaji *et al.*, 2023).

Problems of Post Disaster Housing Reconstruction

One of the most intricate responsibilities being faced by recovery managers in the aftermath of disaster regardless of the form is to decide on and execute the correct approaches to housing reconstruction. Jha *et al.* (2010) opined different methods through which PDHR can be achieved in terms of a household's degree of control over the reconstruction procedures. The selection of an appropriate reconstruction delivery approach depends on several influences including resource availability, speed, efficiency, capacities and experience, technological and socioeconomic views (Barenstein, 2006; Davidson *et al.*, 2007; Hayles, 2010; Chang *et al.*, 2011; Adaji, 2019). International Recovery Platform (2007) and Jha *et al.* (2010) advised that the choice of reconstruction approaches to be engaged should be based on context. It should also give attention to many fundamental factors such as broader political environment and operational criteria, cultural background, cost of reconstruction, improvement in

communities in housing reconstruction is serious to the accomplishment of the programme (Lawther, 2009) and cannot be overemphasised. Ophiyandri *et al.* (2013) stressed that it is the community who understands what they need and at the same time, tell what is best for the community. Hence, the contribution of the community in PDHR projects must be guaranteed (Hayles, 2010). This is the way forward if difficulties encountered in PDHR programmes is to be discontinued. It is in this light that this study is making the proposition of community involvement in practicality to accomplish PDHR goals as well as safeguard its sustainability as the way forward.

housing and community safety, reinstatement of livelihoods, hopes and priorities of the most affected individuals.

Experience shows that planners and developers of PDHR projects tend to reposition and resettle disaster-affected communities (Sadiqi *et al.*, 2017). Housing reconstruction projects constructed by donors (international/ national NGOs or governments), predominantly those that demand relocating affected communities, are usually decided by an inflexible top-bottom approach, which is symbolized by complete absence of community consultation and community involvement in the planning and physical execution of reconstruction developments (Andrew *et al.*, 2013; Adaji, 2019; Adaji *et al.*, 2023). Besides the intrinsic contests such as rigid short time limit, organizing broadly dispersed affected communities, fiscal constrictions as well as validating housing quality (Roseberry, 2008; Olshansky, 2006), reconstruction projects are susceptible to swindle and corruption that can lead to massive losses of project funding (Lyons, 2009; Alexander, 2013).

In a post-disaster situation, Smirl (2008) notifies that donors (governments as well as NGO staffers) can potentially become prone to swindle and corruption specifically when rushed disbursement of bulky sums of recovery funding and dispersal of relief assistance was poorly coordinated and unsatisfactorily supervised. Furthermore, Tas *et al.* (2011) reported that quick disaster recovery led to hurried design where sensitive elements such as the local climate and environment, socio-cultural aspects and user's identity were being ignored alongside construction scheduling and output were also affected due to inappropriate selection of materials, ineffective engagement of labour, poor workmanship and administration. All of these factors compromised the quality of the reconstructed houses.

PDHR that is not appropriately planned and instigated has the potentials to create more exposures in the disaster-stricken community. In the aftermath of a large scale catastrophe, susceptibility of housing

reconstruction projects to various resourcing restrictions embedded in post-disaster scenarios, such as price increase (Nazara & Resosudarmo, 2007), resource insufficiencies (Steinberg, 2007), and interference in the supply chain (Zuo *et al.*, 2009), in no small measure obstruct the reconstruction procedure in communities affected by disaster.

According to Chang (2012), the resource mobilisation level and the potential for procuring crucial resources for reconstruction are determined by the transformed statuses in the aftermath of a disaster. The prospective factors that have the tendency to interrupt the mobilisation of resources in post-disaster reconstruction can be grouped in five classes namely: factors linked to transportation, factors linked to the construction market, factors linked to project stakeholders, factors linked to the reconstruction project, and factors linked to the project operational surroundings (Ibid, 2012).

The preceding review showed that issues inhibiting PDHR cut across four sensitive sections, namely, reconstruction approaches, stakeholders' consultation, resilience strategies, and resource mobilisation strategy. These identified factors capable of affecting resource mobilisation in PDHR settings and other factors prevailing in the PDHR situation can also affect the overall intentions and objectives of reconstruction and recovery efforts in the study area. However, housing reconstruction is not the same as traditional construction due to the plethora of issues that people will have to contend with at the same time (Davidson *et al.*, 2007; Siriwardena *et al.*, 2009). This study will consider the major issues that are peculiar to the PDHR settings in the study area since each setting is confronted with different impediments and recommend the one factor that can influence the identified issues to enhance the satisfaction of beneficiaries and sustainability of the PDHR projects.

RESEARCH METHODOLOGY

This study, which was part of larger study conducted in 2019, adopted a quantitative technique with data from the administration of questionnaire. This quantitative research saw the world as made up of observable and measurable realities, emphasising positivist paradigm. It endeavoured to group issues into measurable classes which can be generalised on every one of the populations (Golafshani, 2003). The survey tool used was a structured questionnaire that was designed

drawing on the factors derived from the literature. The respondents of this study were the 2012 flood victims in Lokoja who were severely affected by the 2012 floods and has since benefited from the latest housing reconstruction and community recovery projects and who the authors believed would have been involved in the reconstruction projects as well as possessed the required experience that will guarantee reliable information for the study. The study adopted the random sampling method which is a method under the probability sampling technique that was chosen so that every member of the target population would have equal chances of being selected in the sample. A total number of 400 (four hundred) questionnaires were administered as recommended by Krejcie and Morgan (1970) and Saunders *et al.* (2016) against a population of about 5817 houses reported under the introduction section. The questionnaires were self-administered to these flood victims on a 5-point Likert scale from 1 to 5, where 1 symbolises 'very Less' and 5 represents 'very high'. Two hundred and fifty-seven (257) valid questionnaires were used for the analyses as shown in Table 2. The data obtained were analysed using mean scores and ranked which formed the basis for the conclusion reached and the recommendations made.

RESULTS AND DISCUSSION

The valid questionnaires used for the analyses was 257 as shown in Table 2. This represented a response rate of 85.3% which is far above the 30% rate, as a satisfactory response rate in construction studies (Williams, 2007).

Demographic Information of the Respondents

Gender distribution in Table 2 showed that about 63% of the respondents were males, and 37% were females. As the family heads were mostly males in the Nigerian context, the margin of difference between males and female is justifiable. The result also showed that more than 88% of the respondents were aged between 26 years to 65years. Based on the age bracket, the conclusion of the study will be satisfactory since, over 88% is advanced enough to understand the difficulties experienced. More than 52% attended a higher education level with equivalent to the first degree and above, while about 48% have attended at least primary school. This is an indication that the majority of the respondents have requisite qualification and training for efficient delivery of responsibilities.

Table 2: Demographic Information of the Respondents

Attributes	Frequency	Percentage (%)
QUESTIONNAIRE ADMINISTRATION		
1	Questionnaires Administered	400
2	Questionnaires collected	301
3	Questionnaires screened	257
GENDER		
1	Male	162
2	Female	95
AGE		
1	Under 26	16
2	Between 26 to 35	62
3	Between 36 to 45	76
4	Between 46 to 55	64
5	Between 56 to 65	25
6	66 years and above	14
EDUCATIONAL QUALIFICATION		
1	Living certificate	33
2	Secondary certificate	28
3	ND/NCE	61
4	B.Sc./HND	105
5	Master and above	30

The Major Difficulties Experienced with the Reconstruction Strategy Employed

A mean ranking was conducted on the major issues experienced from the PDHR by the respondents in the study area. The ranking order for the observed factors was done from highest to lowest using the mean and standard deviation possessed by an individual factor as shown in Table 3.

Problem with non-involvement of affected community ranked highest among the major problems experienced during reconstruction. Then, the high capacity of stockpiling of supplies meant for reconstruction by the donor's agencies, distribution of basic amenities like water, food, shelter, evacuation techniques, transportation networks and political pressure for quicker reconstruction ranked higher. These are logistic and chain supply issues which have always been an attribute of humanitarian operations. Housing reconstruction programmes count on the ability to acquire, transport and receive supplies at the point of need and inadequate provision of resources for PDHR significantly borders the prospects for successful implementation of the reconstruction works (Chang *et al.*, 2010; Ahmed, 2011; Alexander, 2013; Adaji, 2019). Problems with political pressure for quicker reconstruction, problems with the restoration of urban infrastructures and services, problems with compromises on essential elements of the reconstruction programme, problems with unethical conducts of professionals during reconstruction and problems with victims rebuilding on their own ways were ranked next (middle). Problems with return of the evacuees, problems with bureaucracy during reconstruction and

prevalent emotions such as abuses to reconstruction workers occupied the bottom ranking. These identified hindrances connote irregularities in the process of PDHR in the study area. There was little or no recognition of the affected community perhaps, responsible for the victims rebuilding on their own ways and early return of evacuees as seen in the table.

Sadiqi *et al.* (2017) reported that from the large proportion of PDHR interventions already implemented, unsuccessfulness can be traced to non-engagement of, or hitches with, community participation. This is affirmed in the findings on past PDHR projects that such projects are highly susceptible to failure without the active involvement of the affected community (Johnson *et al.*, 2006; Lemanski, 2008; Galtung & Tisné, 2009; Hayles, 2010; Ophiyandri *et al.*, 2010; Adaji, 2019). Several authors have faulted ill-coordinated approach to reconstruction of post-disaster housing. According to Shaw and Ahmed (2010), reconstruction is habitually delivered in such a manner that essentially addresses the implementer's requirements rather than the affected population requirements and this makes these projects often insatiable because community desires are swallowed up by the constructors' bigger benefits such as speed and project costs (Lloyd-Jones, 2006; Brun & Lund, 2008; Alam, 2010).

PDHR projects that are devoid of community participation often result in ugly outcomes. As illustrated by Nadiruzzaman and Paul (2013), that negative impacts were prominent and obvious on the affected communities in Bangladesh over the reconstruction approach initiated by the government of Bangladesh because of non-recognition for community

participation. As Mafukidze and Hoosen (2009) expressed that if the fundamental ethics of community participation are overlooked, it can create long term undesirable effects on community development. Hence, requires putting the right people in the right shape so that the intended objectives can be achieved.

The effectiveness of PDHR also depends on effective resource supplies hence the need for the engagement of

procurement experts and local community members to assess and identify resource requirements, locally available resources and local markets and transportation alternatives. There is less issue connected to the speed of reconstruction and bureaucracy during reconstruction. Perhaps, because the affected community were not or actively involved in the reconstruction activities.

Table 3: Major issues experienced

SN	Variables	Mean	Std. Deviation	Rank
1	Problem with non-involvement of affected community	4.15	0.865	1
2	Problems with stockpiling of supplies	4.09	0.928	2
3	Problems with the distribution of basic provisions such as water, food, clothing, shelter, medical care	3.94	1.075	3
4	Problems with evacuation techniques used	3.86	1.000	4
5	Problems with the rescue of survivors	3.79	0.919	5
6	Problems with transportation networks	3.61	1.496	6
7	Problems with political pressure for quicker reconstruction	3.47	1.330	7
8	Problems with the restoration of urban infrastructures and services	3.42	1.236	8
9	Problems with compromises on essential elements of the reconstruction programme	3.39	1.141	9
10	Problems with unethical conducts of professionals during reconstruction	3.29	1.131	10
11	Problems with victims rebuilding on their own ways	3.25	1.343	11
12	Problems with insufficient workforce across local organisations	3.20	1.293	12
13	Problems with the removal of debris	3.19	1.243	13
14	Problems with speed of reconstruction	3.14	1.231	14
15	Problems with return of the evacuees	3.13	1.184	15
16	Problems with bureaucracy during reconstruction	2.97	1.256	16

CONCLUSION

The appalling nature of destruction emanating from natural disasters has become a global concern and is putting stakeholders on the quest to develop a strategy that will enhance the efficiency and effectiveness of post-disaster undertakings. Affected community’s influence on any decision relating to the disaster relief measures provided is crucial to positive results on post-disaster recovery. Scholars in sustainability and resilience have agreed that involvement of beneficiaries is imperative for the achievability of PDHR targets. This is valuable because each PDHR has special goals to be achieved, and only those with background knowledge can be of reliable help and guide. Hence, offering

beneficiaries the opportunity to meaningfully contribute to reconstruction affairs that are to shape their lives in terms of housing and livelihood, will in no small level minimise problems experienced in PDHR projects. Therefore, community involvement in PDHR is the way forward. Studies should shift dimension from laying emphasis only to restore normal life in disaster-affected areas but more efforts to address PDHR as an opportunity to offer a safer, sustainable and resilient built environment. This is expected to deliver a more sustainable and resilient PDHR development where satisfaction and acceptability of the project will be evident, and the donor will have value for his money.

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