

Framework for Community Participation in Post Disaster Housing Reconstruction

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ABSTRACTS :The study aims to develop a framework for community participation that can inform participatory approach more effectively when planning and developing post-disaster r housing reconstruction projects. It focused on post-disaster housing reconstruction in Lokoja, Kogi state Nigeria. Self administered questionnaire was developed and administered to the construction professionals living within Lokoja town to explore and explain the objectives of the study. The analysed results were extended to facilitate the development of a framework for effective community participation in post-disaster housing reconstruction. However, One hundred and fifty nine questionnaires were administered to the construction professionals working with Kogi state Ministry of works Housing and urban development out of which one hundred and thirty constituting 81% was valid for analysis using SPSS. This study identified eight challenges of community participation, which are: fraud, corruption and waste of project fund, inadequate availability of resources, insufficient capacity of the construction industry, ignoring community local needs culture, community attitude and lack of communication and transparency. A framework is proposed as solution to these barriers which will lead to achieving sense of project ownership and provide livelihood opportunities.

Keywords – Lokoja, community participation, Housing, post- disaster reconstruction

I. INTRODCUTION

The idea participation is not a new one, people have been participating in the development of their communities for many years (Zabihulah et al., 2006). However, the concept of community participation as it is known today is relatively new. The notion of involving communities in social and environmental development and that considering involving the most vulnerable members of communities in decision making should, be control to any participating, has gain prominence since

1960. Since then, various author have attempted to explain the nature of community participation.

Disasters have, now become more frequent around world, causing widespread economic losses and displacing millions of people. Various mitigation and capacity measures are adopted in recovery phases for survival and preparation of future risks. Several studies have recommend the participation of communities-both affected and unaffected can result in effective disaster risk reduction, particularly in the recovery and reconstruction phase (Ganapati and Ganapati, 2008). Community participation is vital in order to harness the full potential of planning projects and ensure their successful of planning projects and ensure their successful implementation. Projects designed around the devolution and involvement of affected communities can result in sustainable and inclusive development (Hickey and Mohan, 2004). Community participation is also a major factor contributing to the efficiency and success of post-disaster housing reconstruction process. In development countries, community participation is gaining significant attention in disaster risk management and increasing resilience of hazard – prone communities (Usamah& Haynes, 2012).

Research into post-disaster housing reconstruction advocates that effective participation of all stakeholders, particularly the inclusion of affected communities in reconstruction, is an important principle for successful projects (Lawther 2009; Barakat 2003; pearce 2003) affected communities that are professionally informed and adequately empowered are able to participate effectively in all phase of post-disaster reconstruction (Denters and Klock 2010). The inclusion of communities in housing reconstruction is particularly important when post-disaster housing reconstruction projects are implemented by governmental organization (GOs) with not effective or current post- disasters strategies, international humanitarian non-governmental organizations (INGOs), or private sub-contractors (Hayles 2010). It is generally believed that

effective communities to influence decision-making in all phases of reconstruction projects. However, the often ill-designed participatory approach (Alam 2010; Sanuders 2004), resulting from the lack of a specific framework to logically guide community participation processes leads to undesirable project outcomes (Davidson et al. 2007). The research aim to develop a framework for effective community participation in Post-Disaster housing reconstruction in Kogi State. The following objective were formulated to achieve the stated aim:

- i. To determine the resource mobilization strategy used by community in post-disaster housing reconstruction
- ii. To determine the challenges of community participation in post-disaster housing reconstruction
- iii. To identify participatory approaches adopted by affected community in post-disaster housing reconstruction.
- iv. To assess the effects of resource mobilization, challenges and participatory approaches on the effectiveness of community participation.
- v. To propose a framework for community participation in post-disaster housing reconstruction.

1.1 Community Participation

Although those people and communities directly affected by a disaster are the first to engage with the emergency, they are often perceived as being mere victims rather than the potential critical driving force behind reconstruction (Jha et al. 2010; Hutauwatt, Bolin and Pijawka 2012). This leads to a neglect of the philosophy that shelter is in fact a process that is directly linked to the very notion that survivors are active stakeholders of reconstruction, rather than passive recipients of humanitarian assistance (Fan 2012).

Local communities and the survivors of disasters play a crucial role in post-disaster reconstruction and their participation ultimately determines project success (Lawther 2009; Lyons 2009; Lemanski 2009; IFRC and ICRC 1994). Post-disaster reconstruction is a complex and highly demanding process that involves a number of different and well-coordinated courses of action. Therefore, it is vital that these complex activities are well planned (Rosebery 2008) and subject to thorough consultation, and effective collaboration with a wide range of community members (John 2008; Pius Mulwanda 1992; Olshansky, Hopkins and Johnson 2012). Since community members have the most knowledge about their own communities and specific building requirements, often possessing a good technical knowledge of

appropriate building techniques, it is critical to involve them when conducting community needs assessments and planning reconstruction projects (Lawther 2009). Communities must also be encouraged and supported to use their own reconstruction techniques when rebuilding their houses (Jha et al. 2010; Gaillard and Texier 2010; Kaklauskas, Amaratunga and Haigh 2009; Geis 2000).

Communities play a vital role in rescuing human lives and reducing personnel casualty during the immediate post-disaster emergency and humanitarian relief phases (Shaw 2006; Dikmen 2005). Affected people also have an important role to play in planning and developing the medium-term recovery and long-term reconstruction; they are active collaborators with systematic contribution in the process of building community resilience and enhancing the overall capacity for disaster reduction (Zhang, Yi and Zhao 2013).

In the aftermath of a large disaster, governments are required to make many important decisions at the same time in order to respond to the fast evolving emergency. However, in the wake of a major disaster, such as the 2004 Indian Ocean tsunami, a government's ability to rapidly gather information about the scale of the disaster to plan and coordinate emergency recovery and the subsequent reconstruction of hundreds of communities can be severely weakened or obliterated (Storr and Haeffele-Balch 2012). In such circumstances, affected people can help and support the gathering and disseminating of important information directly from the affected area of the local and central authorities (Olshansky, Hopkins and Johnson 2012).

A study of community participation in the aftermath of the 2004 India Ocean tsunami revealed the significant role that the Aceh – Indonesia community played in disseminating information about the scale and effect of the disaster to relief agencies, when many government units did not function and could not provide this critical information. The information provided by local communities in Aceh-Indonesia, expedited relief efforts and established the way forward for planning of post-disaster reconstruction (Steinberg 2007). Affected communities in Aceh-Indonesia also played a key role in establishing the identities of those individuals and families affected by the Tsunamis, and their eligibility for assistance (Da Silva and Batchelor 2010; Fan 2012). An analysis of the factors contributing to success, failures and processes of two housing reconstruction policies adopted in the aftermath of the 2004 Indian Ocean Tsunami concluded that owner-driven

programmes in Sri Lanka had higher success rates than donor- assisted programmes. While the number of dwellings produced by owner –driven programmes reached 48,981 (73% of all houses) by December 2006 (two years after the tsunamis), the number of houses produced through donor- assisted programmes remained at only 12,207 (19% of all houses) Lyons 2009).

According to Andrew et al (2013), project sustainability is directly linked to the appropriateness of the approach to reconstruction. These authors argue that of the different approaches to the reconstruction of domestic dwellings, an owner –driven approach, if adopted successfully, has great chances of achieving sustainable project outcome. The opportunity for the affected communities to adopt the coping strategies of their choice to reduce the impact of future disasters, with the immediate benefit of increasing morale, self – esteem, and greater sense of project ownership, is the simplest logic and the foundation for adopting as owner- driven approach.

Thus, it is clear that community participation is important at all stages of post-disaster reconstruction, and since a community is composed of different groups of people, suitable methods to actively include and encourage these groups in the process of reconstruction need to be devised (Lloyd- Jones 2006). Attention must be paid to ensure that disadvantaged members of the affected communities, such as vulnerable women, children, the elderly and persons with disabilities (El-Masri and Tipple 2002; Pyles 2007; Lankatilleke 2010; are properly included in the reconstruction processes, and that the design of

post- disaster reconstruction projects responds to their fundamental requirements (Barakat 2003; Snider and Takeda 2008;). Effective participation must begin with, and by promoted by, effective community empowerment (El-Masri and Tipple 2002). Empowering affected communities to participate in reconstruction enables them to have their input in decisions that are important for their immediate recovery and building desirable resilience; as well as to improve their capabilities for further strategic development (Peng et al 2013).

II. RESEARCH METHODOLOGY

The methods employed for this study embrace extensive searching of relevant literatures connecting to the study such as journals, textbook, magazines and of course the internet. The sample frame for this study comprised of Quantity surveyors, Architects, Civil Engineers and Builders. 159 questionnaires were administered to the respondents (Quantity surveyors 40, Architects 39, Civil Engineers 30, and Builders 50), after selecting them by means of a simple random sampling techniques. On the whole, a total of 130 (81%) questionnaires were returned completed in a usable format. After primary analysis of data, the screened questionnaires for analysis accounted for 35 from Quantity surveyors; 27 from Architects; 23 from Civil Engineers; 45 from Builders. Data analysis were undertaken using descriptive statistics by the application of Microsoft Excel and statistical packages for social sciences (SPSS) where frequency mean and percentages were employed to interpret the results.

III. RESULTS AND DISCUSSION

This session presents the findings for this study.

Table 1: Educational Specialization Type

Category	Group	Number of Respondents	Percentage (%)
Specialization	Architecture	27	20.8
	Building Technology	45	34.6
	Quantity Surveyor	35	26.9
	Engineering	23	17.7
	Total	130	100

The demographic data of the 130 respondents is presented in Table 6. The table reveals that majority of the respondents specializes in building, followed by quantity survey, Architecture and engineering.

Table 2: Level of Educational Qualification

Category	Group	Number of Respondents	Percentage (%)
Qualification	ND	19	14.6
	HND	39	30.0
	BSc/B.Tech	47	36.2
	MSc	17	13.1

PhD	9	6.9
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- The research findings reveal that registered professionals with ND qualification account for 14.6%, HND account for 30%, BSc account for 36.2%, MSc account for 13.1%, PhD account for 6.9% and others whose professional institution were not captured in the survey account for 12%.

Table 4: Professional Institutions

Category	Group	Number of Respondents	Percentage (%)
Professional Institution	NIA	37	28.5
	NIOB	32	24.6
	NSE	29	9.2
	NIQS	28	21.5
	Others	12	22.3
	Total	130	100

- This is an indication that majority of the professionals have requisite qualification and training for efficient delivery of responsibilities. Also, they are in a better position to offer professional advice with regards to the management of housing reconstruction.

Table 5: Years of Experience

Category	Group	Number of Respondents	Percentage (%)
Years of Experience in construction Industry	Less than 5 years	27	20.8
	5 – 11 years	42	32.3
	12 – 17 years	27	20.8
	17 – 23 years	26	20.0
	Over 20 years	12	9.2
Total	130	100	

- Table 2.3 reveals that majority of respondents have between 5 to 11 years' experience with an aggregate percentage of 32.3%. Most of the respondents are between 12-17 years and less than 5 years each representing 20.8%. In addition 17-23 years' experience accounted for 20% while those with above 20years accounted for 9.2%. This implies their possession of valuable knowledge in the building industry placed them on a better position to contribute meaningfully in management of housing facility.
- In addition, most of the respondents were at lower management level representing (28.5%) followed by those at the middle management level accounting for 25.4%. Furthermore, top management level, trade supervision and others represented 10.0%, 17.7%, 18.5% respectively.

Table 6: Resource Mobilization Strategy Adopted by Community in Post-flood Disaster Housing Reconstruction

Category	Mobilization Strategies	Mean	Std. Deviation	Rank
Financial Mobilization	Bilateral funding arranging	2.94	1.16	1 st
	Multilateral agencies	2.88	1.33	2 nd
	Grants and grants-in-aid	2.86	1.08	3 rd
	Lending & banking servicing	2.64	1.13	4 th
	Microfinance Institution	2.46	1.20	5 th
Land Provision	Housing need assessment	2.51	1.19	1 st
	Assessment of land availability	2.28	1.07	2 nd

	Land allocation planning	2.15	1.05	3 rd
	Titling	2.03	0.87	4 th
Labour Mobilization	Mobilization & recruitment of local manpower	2.41	0.99	1 st
	Recruitment & importation of expert	2.26	1.03	2 nd
	Engagement of construction industry actors	2.22	1.06	3 rd
Material Mobilization	Stratification of Material Procurement	2.94	1.16	1 st
	Establish Material Procurement Qualification criteria	2.88	1.33	2 nd
	Logistic and Supplies	2.64	1.13	4 th
	Utilization of e- procurement system	2.46	1.20	5 th

- With regards to resource mobilization strategy used by community in post-disaster housing reconstruction in the study area, the result is presented in three categories (see Table 13). Financial mobilization strategy has five strategies with bilateral funding ranked 1st with mean value of 2.94 is termed effective strategy for resource mobilization in the study area. The table also revealed that multilateral agencies and Grant and grants-in-aid are the 2nd and 3rd strategy in ranking with mean values of 2.88 and 2.86 respectively while lending & banking servicing and microfinance institution is ranked 4th, 5th respectively with their corresponding mean values of 2.64 and 2.46
- Subsequently, financial provision strategy has four mobilization strategies with housing need assessment ranked 1st with mean value of 2.51 is termed effective strategy for resource mobilization in the study area. The table also showed that assessment of land availability and land allocation planning with titling are ranked 2nd, 3rd and 4th are fairly effective resource mobilization strategy with mean values of 2.28, 2.15 and 2.03 respectively.

Table 7: Challenges Of community participation in Post- Disaster Housing Reconstruction

S/N	Challenges	Mean	Std. Deviation	Rank
1	Fraud, corruption and waste of project fund	3.14	1.21	1 st
2	Inadequate availability of resources	2.82	1.16	2 nd
3	Insufficient capacity of the construction industry	2.78	1.14	3 rd
4	Political and Social Pressure	2.68	1.12	4 th
5	Relocation	2.71	1.15	5 th
6	Ignoring local needs culture	2.60	1.14	6 th
7	Community Attitude	2.29	0.94	7 th
8	Lack of Communication and Transparency	2.27	0.96	8 th

- With regards to the challenges of community participation in post-disaster housing reconstruction, Fraud, corruption and waste of project fund ranked 1st, inadequate availability of resources, Inadequate availability of resource, insufficient capacity of the construction industry, political and social pressure, Relocation, ignoring local needs

culture, Community attitude and lack of communication and transparency ranked 2nd, 3rd, 4th, 5th, 6th, 7th and 8th respectively. This is an indication that the respondents are well informed of the challenges of the challenges of community participation in post-flood disaster housing reconstruction based on their

knowledge and information gathered. Bilau, et al. (2017) in their study asserted that post-disaster housing reconstruction depend on the effective delivery of required supplier and relies on a high degree of logistics and expertise.

Table 8: participatory approaches adopted by affected community in post-disaster housing reconstruction.

S/N	Reconstruction Approaches	Mean	Std. Deviation	Rank
1	Community base reconstruction	2.67	1.34	1 st
2	Top down & Bottom up	2.55	1.25	2 nd
3	Models of participation	2.46	1.16	3 rd
4	Operationalization of participation	2.40	1.14	4 th

- The Table 9 shows the participatory approaches adopted by affected community. The results revealed that community base reconstruction ranked first, Topdown& bottom up ranked second, Models of participation and operationalization of participation ranked third and fourth. The results show that community base reconstruction and topdown & bottom up are more effective than model of participation and operationalisation of participation in terms of participatory approaches in housing reconstruction.

IV. CONCLUSION

Post-disaster housing reconstruction projects are complex and they can exist in diverse environmental and political conditions. Housing reconstruction policies are effective if they are formulated based on the needs of the affected people, and thus they need to have adequate participation in decision-making, and in the subsequent rebuilding process of their houses. Adequate participation of the affected population means the introduction of an adequate knowledge input from them in the decisions, and in the project designs, that will in turn influence their future.

This study identified eight common barriers to community participation. Which are: Fraud, corruption and waste of project fund; inadequate availability of resources; insufficient capacity of the construction industry, political and social pressure, relocation, community attitude and lack of communication and transparency. **A framework is needed to overcome this barriers, planning and development of a participatory**

approach to post-disaster reconstruction projects.

REFERENCES

- [1]. Dyar, J.H. (2000). Collaborative Advantage: Winning through Extended Enterprise Supplier Networks. New York: Oxford University press.
- [2]. Fengler, W., Ihsan, A., Kaiser, K. (2008). Managing post-Disaster Reconstruction finance; world Bank publications; Washington DC, U.S.A
- [3]. Flood protection Act of (2012). Amendment to flood disaster protection Act. www.ballardspahr.com
- [4]. Freman, P.K. (2007). Allocation of post-Disaster Reconstruction financing to housing, Building Research and Information 32(5) 427-437.
- [5]. Ganapati, N.E & Ganapati, S. (2009). Enabling participatory planning after disasters: a case study of the word Bank's housing reconstruction in Turkey. Journal of America planning Association, 75(1) 41-49.
- [6]. Greenbiott, K. (2007). Shelter programming learning from Asia Tsunami Response world vision, London.
- [7]. Hadayat, B. & Egbu, C. (2010). Literature Review of the role of project Management in post-Disaster Reconstruction projects in: Egbu, C and Lou, E.C.N (Eds) proceeding.
- [8]. Haigh, R; Amaratunga, D. (2010). An integrative review of the built environment discipline's role in the development of society's resilience to disasters. International

- Journal of Disaster Resilience in the Built Environment, 1(1) 11-24
- [9]. Hayles, C.S. (2010). An examination of Decision making in post-disaster housing reconstruction. *International of Journal of Disaster Resilience in the Built Environment*, (1) 103-122.
- [10]. IFRC (2010), World Disaster Report-International Federation of Red Cross and Red Crescent societies. Geneva
- [11]. Karunasena, G., Remeezdeen, R. (2006). Post-disaster housing reconstruction *international Journal of Disaster Resilience in the Built Environment*. 1(2), 173-191.
- [12]. Kennedy, J., Ashmore, J., Babister, E., Kelman I, Zarins, J. (2008). In water and urban Development paradigms, Disaster mitigation Lessons from “Build back” better” following the 26 December 2004 Tsunamis, feyen, J., Shannon, K., Neville., Eds., Taylor and Francis Group London UK, 2009; 297-302/SBN 978-0-415-48334-6.
- [13]. Kothari, C.R. (2009). Research methodology methods and techniques. (2nd Revised Edition), New Age International Publishers.
- [14]. Kyung, N.K. and Jae-ho, C (2013). Breaking the vicious cycle of flood disasters: Goals of project management in post disaster rebuild projects. *International Journal of Project Management* 31, 147-160.
- [15]. Lewis, J., (2003). Housing construction in Earthquake-prone places: perspectives, priorities and projection for development. *The Australian Journal of Emergency management*, (18)2, 35-44.
- [16]. Lowe, L. (1997). Earthquake Resistance Housing in Peru. Rudby: Intermediate Technology Development group.
- [17]. Mitchell, J.K (1999). Mega-cities and Disasters in Transitions, Tokyo: The united in transitions, Tokyo: The United Nations university.
- [18]. Myburgh, D., Wilkerison, S & Sevilk, E. (2008). Post-Disaster Reconstruction Research in New Zealand: An Industry update: Resilience organizations
- [19]. National Emergency Management Agency. (NEMA). Industrial and Commercial buildings fire in Nigeria, NEMA, 2006
- [20]. National Housing Development Authority (NHDA) (2005). Guidelines for Housing Development in Coastal Sri Lanka, ministry of Housing and Construction Colombo.
- [21]. Niazi, Z., Anand, C. (2010). Post-tsunami reconstruction in south in south india: Lessons for habitat development, in lizarralde, G, Jigyasu, R., Vasavada, R., Havelka, S, DuyneBarenstein, J. (Eds) Proceedings of the I-Rec 2010 conference on participatory Desing and Appropriate Technology for post-disaster Reconstruction, 15-20. Ahmedabad, India. Montreal: Groupe de redierche if, GRIF, Universitedemontreal, 110-122.
- [22]. O’Brien, D.J. and Ahmed, K.I (2008). Housing Reconstruction in Aech: Relationship between house type and Environmental sustainability, in Lizzaralde, G, David son, C., Pukteris, A and De Bois, M. (Eds). Building Abroad; procurement of construction and Reconstruction Projects in the international context. Universite de Montreal, Montreal. Pp. 361-370
- [23]. Pandey, O. (2005). Community Based disaster management: Empowering communities to cope with Disaster Risks Retrieved on 22nd may, 2018 from <http://www.tarmrackcommunity.ca/g3s86.html> Accessed.
- [24]. Practical Action (2006). Infopacks: Rebuilding Homes and Livelihood. Practical action Colombo Quarantelli, E.L (1982). Sheltering and Housing after major community Disasters: Case studies and observations, Ohio State University.
- [25]. Andrew, S., Arlikatti, S., Long, L., Kendra, J., (2013). The effect of housing assistance arrangements on household recovery: an empirical test of do nor assisted and owner-driven approaches. *J. Housing Built Environ*. 28, 17-34.
- [26]. Dikmen, N., (2005). A Provision Model and Design Guidelines for Permanent Post-Disaster Housing in Rural Areas of Turkey Based On An Analysis Of Reconstruction Projects in Çankiri. (PhD). Middle East Technical University.
- [27]. El-Masri, S., Tipple, G., (2002). Natural disaster, mitigation and sustainability: the case of developing countries. *Int. Plan. Stud*. 7, 157-175.
- [28]. Hutanuwatr, K., Bolin, B., Pijawka, D., (2012). Vulnerability and disaster in Thailand: scale, power, and collaboration in post-tsunami recovery. In: Pfeifer, K., Pfeifer, N. (Eds.), *Forces of Nature and Cultural Responses*. Springer Netherlands.
- [29]. Johnson, C., Lizarralde, G., Davidson, C., (2006). A systems view of temporary housing projects in post-disaster

- reconstruction. *Constr. Manag. Econ.* 24, 367–378.
- [30]. Kaklauskas, A., Amaratunga, D., Haigh, R., (2009). Knowledge model for post disaster management. *Int. J. Strateg. Prop. Manag.* 13, 117.
- [31]. Lawther, P., (2009). Community involvement in post disaster re-construction - case study of the British red cross Maldives recovery program. *Int. J. Strateg. Prop. Manag.* 13, 153.
- [32]. Lloyd-Jones, T., (2006). Mind the Gap! Post-Disaster Reconstruction and the Transition from Humanitarian Relief.
- [33]. Lyons, M., (2009). Building back better: the large-scale impact of small-scale approaches to reconstruction. *World Dev.* 37, 385–398.
- [34]. Olshansky, R., (2006). Planning after hurricane Katrina. *J. Am. Plan. Assoc.* 72, 147–153.
- [35]. Olshansky, R.B., Johnson, L.A., Horne, J., Nee, B., 2008. Longer view: planning for the rebuilding of New Orleans. *J. Am. Plan. Assoc.* 74, 273–287.
- [36]. Peng, Y., Shen, L., Tan, C., Tan, D., Wang, H., (2013). Critical determinant factors (CDFs) for developing concentrated rural settlement in post-disaster reconstruction: a China study. *Nat. Hazards* 66, 355–373.
- [37]. Pius Mulwanda, M., (1992). Active participants or passive observers? *Urban Stud.* 29, 89–97.
- [38]. Shaw, J., Ahmed, I., (2010). Design and Delivery of Post-Disaster Housing Programs: Case Studies from Sri Lanka and India. The Royal Melbourne Institute of Technology, Melbourne.