

ASSESSMENT OF RESIDENTIAL SATISFACTION IN THE RESETTLEMENT TOWNS OF THE KETA BASIN IN GHANA

Joseph A. Danquah *, Jeanette Attippoe A. **, Johnny S. Ankrah *

* Research Scientist, CSIR- Building and Road Research Institute, Kumasi, Ghana

** Practicing Architect at Beige Group, Ghana

ABSTRACT: *The Keta Sea Defence Restoration Resettlement Project was a response to the constant sea erosion along the Keta basin which had endangered about 500,000 people over the years. Started in 1999 the scheme aimed at resettling about a 1,200 households with the first resettlement completed in 2004. Ten years later this qualitative exploratory study employs the interpretive philosophy to investigate and make inquiry into the suitability of the location of the Keta Sea Defence Resettlement Project, in general, and the housing units, in particular, as well as the impact of inhabitants' participation and length of stay on residential satisfaction. The multi-stage sampling procedure was employed to solicit and gather information from three resettlement towns through a semi-structured questionnaire. The 5-point Likert scale and the spearman's rank correlation test were used to establish the satisfaction levels as well as their relationship between their neighbourhoods and beneficiary participation. The study revealed that, irrespective of the fact that, the residents were generally satisfied with utility and infrastructural developments; as well as strongly affirming the perception of the new housing units as being a general improvement on their original homes, with a 100 percent endorsement of the introduction of water closets as appropriate, they were still unsatisfied with the number and size of the sleeping rooms and the size of land given. Additionally, the study also revealed a positive correlation between lengths of stay and residential satisfaction of the physical compensation received, utility and infrastructural provisions, as well as livelihood restoration; the reverse, however, is true for security. This result is understandable, since longer years of stay are associated with population growth which is usually riddled with security difficulties and challenges. It thus recommends that, beneficiary participation is essential but more potent with appropriate technical supervision and vice versa through, empowerment, building beneficiary capacity amongst others.*

KEYWORDS: Resettlement scheme, Livelihood restoration, Cost sharing.

INTRODUCTION

Resettlement projects are interventions or measures that respond to the provision of shelter to inhabitants who are victims of certain disasters or forced displacement with the main aim of restoring them livelihoods as close as possible to their former lives if not providing them with better conditions. With an increasing number of displaced communities due to environmental change, exploring long-term resettlement dynamics including "relocation and repopulation" are becoming important as well as the need to understand the policies and planning that can support better resettlement of affected communities (Levin et al, 2007).

The two (2) main categories of challenges and opportunities play out during post-disaster resettlement projects. On one hand is managing the anxiety of displaced persons coupled with the constraints of time, whilst putting all efforts in place to tap the opportunities of rebuilding. When

this choice is finally made, and then comes the dilemma of relocation or repopulation. (Luchi, 2010).

Davidson et al (2007) have identified various approaches that have been adopted by both aid organizations and government officials to ensure smooth transition to new resettlements either on the same original land (repopulation) or in entirely new areas (relocation). These have ranged from making interest free loans available to victims to reconstruct their houses within certain laid down guidelines and supervision; requesting a number of man hours (labour) of participants on reconstruction sites; through, merely seeking opinions of victims on certain actions of the government or donor agencies; and to finally, being granted loans to partly cover the construction, to which participants can add and take part in the construction as well; in this instance, designs may be proposed by authorities for selection by participants. These systems have been executed in various countries such as Colombia, Turkey, Cameroun, Sri Lanka, Ghana, among others; and have recorded varying degrees of benefits and disadvantages.

It is an indisputable fact that, disasters are usually a manifestation of and usually emanates from existing elements associated with a specific locality. For Luchi (2010), "Post-disaster resettlement is a dynamic that develops based on inherent characteristics of the affected area". This idea is further re-emphasized in Jo Da Silva (2010) elaborating the fact that, every post-disaster situation is unique and hence the need for a continuous research to create a comprehensive body of knowledge into resettlement housing.

In Ghana, resettlement is not entirely strange. The low-lying areas have had adverse effects and risked outpouring from dam construction, especially, the Akosombo hydro-electric dam on the Volta River in the 1960s. Notable among these towns include the villages around the Afram plains and Kpong. Other forms of resettlement in Ghana, necessitated by development projects, especially mining activities, include towns in Obuasi, Ahafo and Bosomtwe resettlement schemes. One complex incidence, as identified with the Keta basin (study area), were the combination of effects from both man-made development as well as a natural phenomenon. It also turns out to be the only coastal town in which significant interventions have been implemented to arrest the devastating effects of sea erosion and in a broader sense, avert the destruction of environmental elements (the tendency of the sea mixing with the fresh water). The project dubbed the Keta Sea Defense Project (KSDP), has components of land reclamation and the construction of residential units. In this study, the evaluation of the resettlement units sought to ascertain the user value and the objectives of the project in terms of:

- ✓ The suitability of the housing units and the location of the project to the cultural, infrastructural and economic satisfaction of the inhabitants.
- ✓ The impact of inhabitants' perception (contribution) on residential satisfaction.
- ✓ The design in tandem with its response to persistent environmental factors.

This case study was relevant in providing feedback to the major key stakeholders on the performance of this large resettlement scheme and make further improvements in future.

LITERATURE REVIEW

Post-Disaster Resettlement dates as far back as the 1940s as manifested in the deportation or movement of the Jews into ghettos. In another instance, the scenario of resettlement among the Egyptians in the 1970s was indicative of a struggle between the choices of voluntary or involuntary resettlement. Lately, the 2004 Asian tsunami breathes a new dimension with a significance of the introduction of transitional housing to serve as an intermediary relief towards providing permanent housing. Other countries such as Turkey, Sri Lanka, Bangladesh and India have had their experiences in creating new or repopulating towns as a result of effects of disaster or need for development.

Definition

Resettlement is the process by which people leave their original settlement sites to inhabit new areas (Woube, 2005). Resettlement also known as rehabilitation is a process by which those adversely affected by disasters' are assisted in their efforts to improve, or at least to restore their incomes and living standards. The resettlement programme possibly includes the procedures ranging from finding places for temporary shelters (sometimes co-habiting with relatives and friends) to constructing permanent houses in the original or new places (Deruyttere, 1998).

The term resettlement involves an entire process which consists of various stages and targets for relief activities and thus encompasses terms such as displacement through transitional housing to permanent resettlement sites. To Luchi (2010), however, resettlement refers to an activity that encompasses both meanings of out-migrating and returning/remaining for permanent living. In simple terms, resettlement is an act of either relocating or returning by choice after being forcibly displaced to a distant place temporarily after a natural disaster.

Concepts of Post-Disaster Resettlement

There are two main concepts of resettlement namely, voluntary or involuntary. Furthermore, activities under each of these categories are executed in the form of either relocation or repopulation. Descriptions of each of these terms are outlined below:

Involuntary Resettlement

Involuntary resettlement refers to two distinct but related processes; displacement and resettlement. Displacement is a process by which development projects cause people, hereafter known as "Project Affected People" to lose land or other assets or access to resources; this may result in physical dislocation, loss of income, or other adverse impacts. The vast resettlement literature (UN-Habitat, 1991; World Bank, 1994; Guggenheim, 1994) contains numerous references to involuntary resettlement caused by natural disasters in the form of earthquakes, floods, hurricanes and storms; social upheaval evidenced in famine, labour migration, land appropriation and war as well as development projects such as dams, natural resource extraction, urban renewal and development (Picciotto et al 2001). Organizations associated with involuntary resettlement decisions (governments, private sector entities, non-governmental organizations (NGOs), among others) often make significant efforts to alleviate the negative socio-economic and environmental impacts of resettlement through disaster planning and management (Davidson et al., 1993; Cernea, 1997, 2000). Badri et al, (2006), however, stress that, the root causes of resettlement lead to different responses. In the case of natural disasters and social conflict, the resulting resettlement decisions must be taken relatively quickly: the disaster context typically

requires reactive (emergency) decision-making, there is insufficient time for proactive planning and stakeholder consultations; as compared to voluntary resettlement induced by development or long standing and recurring scenarios of flood and erosion. Badri et al, (2006) further indicates that, international experiences of voluntary and involuntary resettlement reveals; it is difficult to achieve success, particularly when resettlement is carried out as part of development projects. However, whilst various factors contribute to the failure of resettlement policies, inadequate planning and management on the part of both government and donor agencies, often play a major role.

Relocation

Relocation refers to rebuilding housing, assets including productive land and public infrastructure in another location (Asian Development Bank, 1998). Though it offers opportunities to improve the livelihood of the affected people by enhancing access to employment as well as public services and reducing vulnerability of geo-physical environment; it may however; disrupt existing community networks as well as economic and monetary stability (Cernea, M., 2000).

Repopulation

According to the Oxford Dictionary (10th edition), repopulation refers to the introduction of a population into a previously occupied area or country. It is the direct opposite of relocation. Though, it may preserve community systems and stability; it has the tendency to sustain or increase future vulnerability of the community under certain instances, example decline and geological hazards.

Overview of Theories and Empirical Studies.

Table 1. Similarities and Dissimilarities between the Ghanaian Resettlement Framework and the World Bank.

World Bank Framework		The Ghanaian Framework	
Land Owners	Land-for-land exchange; compensation based on replacement cost.	Land for compensation (<i>Value not stated</i>)	Land Owners
Squatters	Authorities should provide resettlement assistance	No provision	Squatters
Land Users	Suitable compensation For Buildings: Compensation is at replacement value.	Suitable compensation For Buildings: Compensation is at replacement value.	Land Users
Permanent Buildings	Compensation for both land & buildings For Land: Compensation is at market value	For Land: Compensation is at market value For Buildings: Compensation is at replacement value.	Permanent Buildings

Source: Compiled by Author 2014

Residential Satisfaction

Residential satisfaction (RS) is described by Hui and Yu (2009) as a reflection of the degree to which the inhabitants feel that, their housing is helping them achieve their goals. Generally, theories have stated that RS is a measure of the difference between occupant's actual and desired housing as well as neighbourhood. In this study, the expectancy value and the discrepancy model are explored.

In the expectancy value model, the evaluation process is mostly dependent on people's expectation and beliefs as paired against the ability or the inability of the evaluated object to hinder the attainment of their goals. A paradigm associated with the discrepancy model, on the other hand, was identified by Oliver (1981). This paradigm states that if performance exceeds expectations, customers will be positively disconfirmed (satisfied); the reverse is true. Churchill and Suprenant (1982), however, did draw a critical attention to the fact that, neither disconfirmation nor expectation has any effect on consumer satisfaction with durable products. To them, satisfaction is determined solely by the performance of the product; in a scenario were at the house epitomizes the durable product; the satisfaction of the occupant boldly rests on the designer and his choice to ensure high performance and thus, attain high residential satisfaction.

Location Determinant

The choice of location is one major decision that riddles the minds of victims, government officials and donor agencies alike. Whilst one, especially the government may want to stay clear of disaster sites altogether due to uncertainties associated with attempts to control natural causal agents coupled with its attendant huge financial requirements, the victims, usually, cannot accept to be severed from their old ways of life; the memories built of the former homes, natural and built environment as well as cultural and social ties with neighbours; these are elements Adger et al, (2005) and Miller, (2005) identify as crucial for fostering adaptation and learning from a disaster. The choice between repopulation or relocation is always a herculean one; though the latter presents a clean slate to rebuild physical components, it equally has the propensity of resulting in community disarticulation. Recently, Cernea and McDowell (2000) further described the main elements of community disarticulation as the scattering of kinship groups and informal networks of mutual help. In most cases, repopulation or return has proved more fruitful. This goes to emphasize the thoughts of Butterworth, I. (2000) that spaces, places and buildings are more than just props in people's lives; they are imbued with meaning and resonance, as they symbolize personal histories, interpersonal relationships and shared events in people's extended relationships, families, communities and wider culture. Though it presents the more expensive option, repopulation serves a greater purpose of meeting an all-inclusive need and a broader satisfaction of inhabitants as well as sustaining the environment.

User Satisfaction

Reconciling the objectives of any development project with the expectations and requirements of the intended users is fundamental for the success of the project; though Lizarralde (2010) warns that, it is particularly difficult to ensure this success in low-cost housing reconstruction. Under the conditions of post-disaster reconstruction, however, the non-acceptability of projects and user's dissatisfaction are the most frequent risk. It has also been established that, the failure of many public and private housing projects could be associated with the lack of inclusion or consideration

for relevant inputs emanating from the end-users or occupants. According to Liu (1999), it is imperative that residential buildings should not only fit for the purposes of the users but be able to perform their function in such ways as to ensure relative residents' satisfaction. The current and future prospects in the housing sector depend on the extent to which owners/occupiers are satisfied with built facilities.

Additionally, Liu (1999) and Ilesanmi (2010) re-emphasize the notion that, consumer satisfaction is not only a matter related to the handing out of a freshly completed building but a life cycle issue which has to be taken into account right from the initial phase. To adequately determine residential satisfaction, the building and its environment has to be subjected to a process called the post-occupancy evaluation (P.O.E). Prieser et al (1988) refers to P.O.E as a process involving the evaluation of elements relating to technical, functional and behavioural aspects. In an affirmation of this opinion, Izran et al (2010) further indicates that, P.O.E focuses on the survey for user feedback and involves investigation as well as analysis towards a relationship between objectives and user perception of a particular building. It is also a crucial process to improve and ensure the building's performance for future use.

Approaches to Resettlement

Issues related to post-disaster resettlement and reconstruction are normally varied and complex. Though the declarations of U.N.D.R.O in 1982 has whipped up great interest towards a number of activities and the cosmetic christening of activities of relief agencies as participatory, there is actually much left to be desired. Sliwinsky (2010) points out that, whilst participation gives a morally legitimate framework to projects; its execution remains faint and vaguely noticeable. However, the various activities in the past have established that, the failure of any resettlement project does not necessarily depend on the policies drawn but rather the actual implementation. In other instances, therefore, there have been records of successful project as well. Tracing through literature, the success is usually acknowledged with concerted efforts by both governmental and non-governmental agencies to indulge community participation right from the consultation process, through the design stage to the actual implementation of the project.

Five approaches as identified by Barrenstein (2012) in real life examples are discussed in the table below. Inputs from opinions of other authors are also included in this research project.

Table 2. Resettlement Approaches. (Adapted from discussions of Barenstein, 2012).

TYPE OF APPROACH	FEATURES	DISADVANTAGES IDENTIFIED BY THE WORLD BANK	CASE STUDY	MANIFESTATIONS
Agency-Driven Reconstruction In Relocated Sites (ADRRS)	Gives the least opportunity for the community to participate in the reconstruction of their houses. Decision-making & resources are	Difficulties and delay in finding appropriate land with same socio-cultural & economic opportunities. Loss of local building culture & capacity.	3 villages of Gujarat, India by Barenstein, 2006.	Dissatisfaction on quality of materials & construction was very high (96.5%). No privacy for women, no space created for inhabitants' animal rearing habits. Choice

	managed & controlled by governmental & non-governmental agencies. Houses are one-type-fits-all design & in most cases do not take into account the livelihood & space requirements of different families. The agencies are quick to opt for this approach since they consider it the fastest & easier way to replace the damaged houses. (Bareinstein, 2012)	Disruption to common property, natural & cultural heritage sites. Settlement layout, housing design, & building technologies can be alien to the local community & culturally inappropriate esp. for rural areas. Generally, lack of CP may result in poor targeting, unequal distribution of houses & elite capture. (Jha et al, 2010)	Sri Lanka after the 2004 tsunami.	of location was another point of disgruntlement; though there was an oversupply of houses, occupancy rate was low. Many families rather preferred to rebuild their own homes on the pre-disaster site. Clearly, there is evidence of society disarticulation & socio-economic disintegration. In addition, eating habits of the inhabitants were affected as they could no longer access fish, vegetables & fruits.
Agency-Driven Reconstruction In-Situ (ADRIIS)	Governmental & non-governmental agencies hire contractors to replace damaged houses in their pre-disaster location. Typically, designs, materials & expertise are imported. Though the construction may be in-situ, villages to lose the beauty & harmony of vernacular buildings. However, the community gets a chance to formally or informally have a degree of control & participation. A level of dissatisfaction could	Remaining buildings & natural environment may be demolished & all traces wiped out. Exogenous building technologies may be used, which may have negative impacts & not meet local requirements. Community participation may be difficult to incorporate if not well planned or limited to leaders resulting in disproportionate access & benefits for elites.	Tamil Nadu after the 2004 tsunami	This system was adopted but decisions were left at the discretion of the “foreign” contractors. They decided to clear every building & remove every tree from the before starting any construction. This led to absolute loss of & link to any cultural elements & spaces. Worst still, the ecosystem of the site was destroyed resulting in increased thermal gains as compared to enhanced thermal comfort of their pre-disaster homes. (Barenstein, 2006b, 2011a)

	also be addressed during the construction period.			&Niami-Gasser, 2012)
Community-Driven Reconstruction	This approach involves financial and material assistance channeled through community organizations that are actively involved in the decision-making & reconstruction. This approach is identified with flexibility, It also has a high tendency of fostering social cohesion as well as capacity building & enhances the sense of ownership.		Aceh & Parts of Gujarat (Leeman, 2011)	In Gujarat, for example, houses built adequately fit into the context of the region. This system is often linked with community development & participation in the reconstruction of collective resources facilities, schools & recreational spaces. Overheads, may however, be high.
The Cash Approach (CA)	CA refers to an unconditional financial assistance without technical support. CA is usually appropriate for reconstruction after a disaster which had a relatively limited impact & where housing damage were not as a result of shortcomings in local construction process beneficiaries may have the choice to use the assistance based on their own priorities which may	Though it may be considered cost effective & rapid in delivery of aid to households. It may reproduce pre-disaster vulnerabilities. It does not Foster improvement of building skills.	Santa Fe, Argentina after severe floods of 2004.	This approach was fairly successful as the event fits all the circumstances under which it could be more useful. However, people could not build back better.

	not necessarily be housing.			
Owner-Driven Reconstruction (ODR)	This encompasses all efforts of conditional financial & or material assistance accompanied by regulations & technical support aimed at building back better. The owner usually controls the payment of the contractor & will only do if he is satisfied with the work.	It is the empowering & dignified approach for households. It is consistent with normal incremental housing construction practices. Repair of houses & uses of salvaged & local building material is encouraged. Local building industry is involved & thus contributes to restoration of local economy & livelihoods. People can “top-up” housing with their own savings & build a house reflecting their specific needs & aspirations. It is viable for dispersed & remote settlements.	Gujarat after the earthquake of 2001 (<i>Barenstein, 2006</i>)	Given the choice, about 73% of the victims chose this option. The survey also reveals that ODR led to a highest level of overall satisfaction (93.3%). People were able to move back quickly into the ODR houses as compared to agency built houses. The quality of construction was also good & they preserved their cultural identity & traditional character.

Table 2 shows that the owner-driven reconstruction proves the most successful of all the five aforementioned approaches. Though the main drawback identified with this approach is that, its time-consuming nature, it equally provides a platform for the inclusion of substantial content from both inhabitants & technical supervisors among others.

Resettlement in Ghana

In Ghana, the issue of resettlement became more pronounced during the construction of the Akosombo dam built on the Volta River in 1964. Various forms of resettlement had taken place whilst many others also took place due to other development projects such as mining. The case of the Keta basin presents a unique and dynamic paradigm which demands research. This is because an attempt at any developmental project in the Keta basin does not only restore livelihoods but also ensure the integrity of an internationally recognized Ramsar site was kept intact. Though disturbances of erosion were noticed as far back as the 1920s (Acheampong, 1996), coastal erosion and flood risk to Keta was aggravated due to the shortage of littoral sediment resulting from the construction of the dam; resulting in flooding, increased erosion as well as incidence of displacement of close to 500,000 people (Keta Municipal Assembly, 2010).

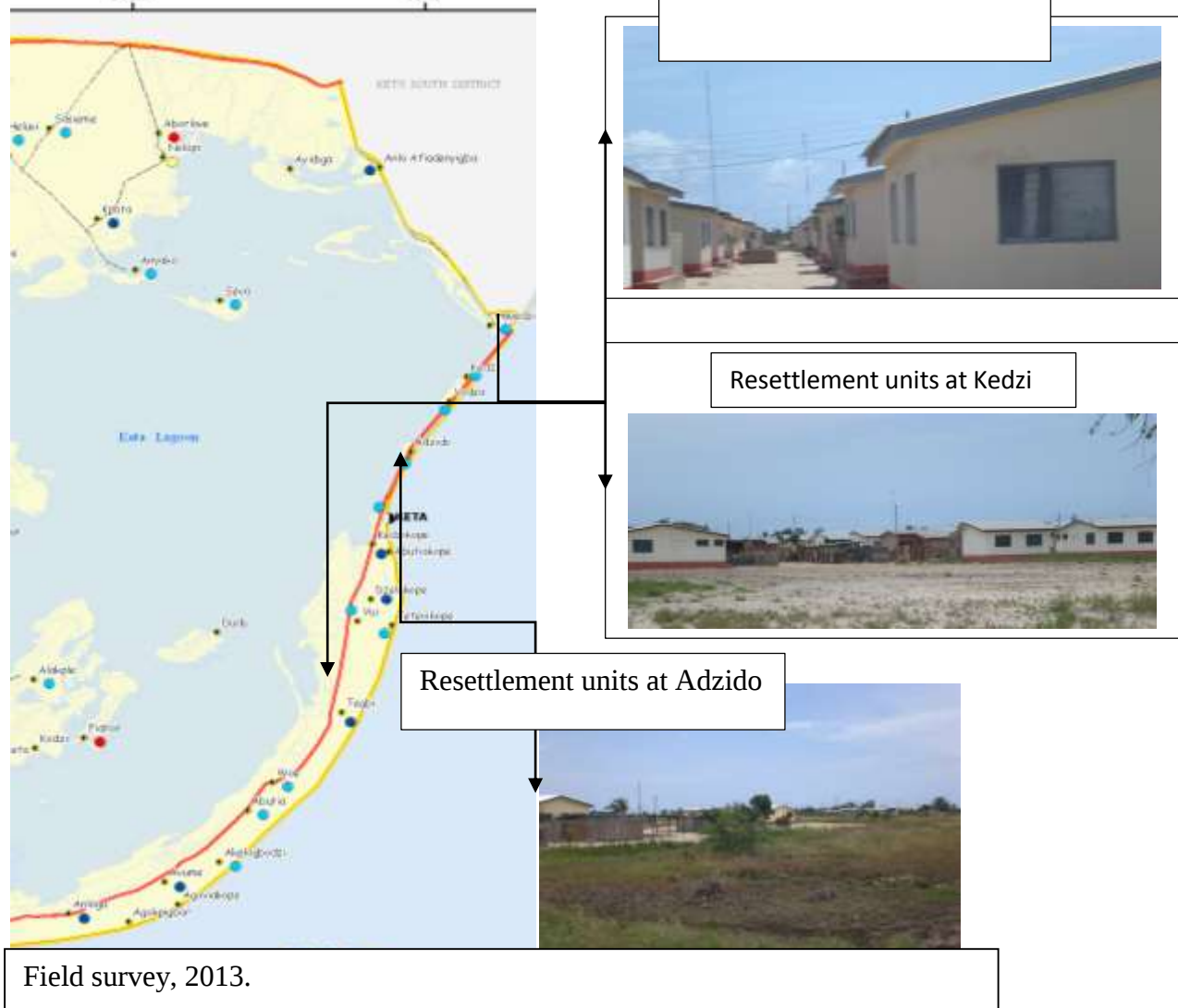
Attempts at sea defence and protection of lives and properties included approaches and suggestions of “do nothing”, that is, total abandoning of the town, on one hand, and resettling the people to Denu, a town to the east, on the other hand. A timely intervention and concerted effort by the people ensured that, they were not removed from their daily livelihood and economic activity of fishing. The choice to rather relocate to a nearby suburb to the west, Dzelukope, a place they considered easily accessible to major economic activities, was a more acceptable option (Acheampong, 1996). The sea, however, continued to ravage the coast and threatened to cut off the town from neighbouring countries like Togo and Benin. More importantly, the “do-nothing” approach had a high potential of totally destroying aquatic life as the sea was intruding fresh water and groundwater sources and thus demanded a more wholesome and integrated approach.

The old dwellings have been exposed to flooding and other persistent environmental factors compounded by development projects on the Volta Lake. Housing units involved were in the form of large family compounds which ensured continuous link between the generations of the family. It is expected that units provided as replacements should consciously address issues relating to the prevalent socio-cultural and economic dimensions of the victims’ lives as well as persistent environmental factors. Unfortunately, walking through the new settlement, there is no clear indication of attempts in such regards. This is evident in varied and wide spread attempts at modification to the units; a clear sign of a missing link in meeting the needs of the inhabitant during the design, construction and delivery of the housing units.

Background to Study Area

The three (3) study towns namely, Adzido, Vodza and Kedzi, are basically walking distances of average five (5) kilometers apart. They are all rural areas under the main town, Keta. A section of the Keta Sea Defence Project, covering a stretch of more than 8.3km, engulfs the three (3) towns together with Horvie and Havedzi. Adzido, Vodza and Kedzi, are located within a 5km radius of one another, as shown in fig.1 below; and just as the main town, Keta they are predominantly fishing villages. People of Vodza and Kedzi are considered indigenes of the town whilst history indicates that, inhabitants of Adzido are mostly visitors who were spared a piece of land to settle. The name “Adzido” is symbolic of the native Ewe name of a huge baobab (adzido) tree which was a node on the piece of land given them. Kedzi, on the other hand, as synonymic to Keta, literally means on top of the sand. The inhabitants of Vodza, however, are believed to have been descendants of three main families namely Kukubor, Hodolie and Kpododekate. The name Vodza literally means, “*fear and avoid it*” and this is affectionately carried around in greetings as “Vodza – voenadze nee, katsekor; and this is intended to compliment all attempts at instilling goodwill, decency, truth and honesty into the inhabitants. The area has predominantly developed into a home embracing all descendants of these three families. This is evidenced in a high sense of ownership exhibited in their daily living and especially during the resettlement process. They were singled out as “stubborn” due to their outward display of displeasure and refusal to move into, what they term, “inadequate transitional housing (aflasco, because they were constructed of a natural and indigenous material called aflagba)”. These original homes they considered were bigger and spacious than the new houses being offered are presently serving as a cushion as it still accommodates overspill of large family households who cannot fit into their new houses.

Figure 1. Diagram depicting the study areas and the resettlement units at Vodza adopted.



RESEARCH METHODOLOGY

For this research study, a multi-stage sampling procedure was employed to sample a total of 528 inhabited housing units at the Keta Sea Defence resettlement. The first stage involved the purposive sampling of three towns in the area involved in the repopulation. The sampled towns were Vodza, Adzido and Kedzi. In the second stage, the housing units in these three towns were stratified on the basis of the building state, and the differences were assessed using the Chi-Square Test. The tool was also used to analyse the difference in the performance of housing units and the resultant residential satisfaction observed in the study areas. The housing units were stratified into housing units with no modification, those with fence and extension, those with extension only and those housing units with fence only. The third stage involved the use of proportionate sampling procedure to calculate the sample size for each building state in each town. A sampling frame of all the housing units were obtained from observation and identification of individual housing units.

In the final stage, a simple-random sampling by balloting was employed to select the sampled housing units with specific building state in each town. The total sample size of 228 units was arrived at using the formula propounded by Yamane, T. (1976) as shown below:

$$\text{Sample size } (n) = N / 1 + N (e^2) = 528 / 1 + 528(0.05^2) = 228 \text{ units}$$

Where; e is the error of significance.

n is the sample size and N is the population (houses inhabited forming the effective population).

The Likert type scale was also employed or used to test the respondents' perception on satisfaction. The scale was proportioned between weights of "5" and "1" with the former denoting the higher weight of a strongly agree response whilst the latter denotes the lowest weight of a strongly disagree response; other weights of 4, 3, and 2 range between "5" and "1" in descending order. Additionally, the Spearman's Rank Correlation Test was also used to test the relationships that exist between the two components such as participation and satisfaction. The test values range between -1 and 1; a result of -1 implies a perfect negative correlation, and the reverse is true.

FINDINGS AND DISCUSSIONS

Socio Demographic Characteristics of Respondents

From Table 3, out of the total respondents surveyed ($n=228$), 134 were males whiles 94 were females. The majority (46.1%) of the surveyed males were residents of Vodza. Also, the majority of the females surveyed were from Vodza. The mean age of the surveyed respondents was 40 years.

Table 3: Socio Demographic Information of Respondents

Demography	Vodza	Adzido	Kedzi	Total
Gender				
Male	62(46.3)	47(35.0)	25(18.7)	
Female	41(43.6)	40(42.6)	13(13.8)	94
Mean Age	39.32	39.83	43.21	40.16
Nationality				
Ghanaian	103(45.2)	87(38.2)	38(16.7)	228
Family size				
1-5	19(46.3)	17(41.5)	5(12.2)	41
6-10	45(41.7)	44(40.7)	19(17.6)	108
11-15	21(40.4)	19(36.5)	12(23.1)	52
16+	18(66.7)	7(25.9)	2(7.4)	27
Average number of households in the house	1	1	1	1
State of building				
No modification	24(40.7)	24(40.7)	11(18.6)	59
Fence and extension	27(54.0)	18(36.0)	5(10.0)	50
Extension only	17(35.4)	14(29.2)	17(35.4)	48
Fence only	35(49.3)	31(43.7)	5(7.0)	71

Source: Field Survey, 2013.

The residents of Kedzi relatively had the highest average age of 43 years. All the surveyed respondents were Ghanaians.

Levels of Modification

Modifications and extensions refer to any form of additions made to the allocated 1-bedroom resettlement unit by inhabitants; they may range from all sorts of fence walls through changing the use of a space to additional sleeping rooms and utility areas. Out of a total population of 528 housing units, 389 units making close to 74% have undergone a level of modification. 305 of these modified units were identified with an addition of a fence wall. This was no mere coincidence since the indigenes are noted for being an outdoor people; the high interest in fence walls goes to confirm the significance of privacy and attention to safety and security to the inhabitants. Out of the three study towns, Vodza was noted to have a higher and widespread level of modification.

Satisfaction of Physical Compensation

From the mean differences (in parenthesis) adopted as a proxy of satisfaction gap between characteristics of new and old dwellings, it is evident that, respondents from all three towns, Vodza, Adzido, Kedzi, are equally unsatisfied with the adequacy of the number of sleeping rooms (-1.75), the size of the rooms (-1.51), as well as the size of land given (-1.21) in the new dwellings but confirmed a high positive index of satisfaction (1.07) with the new houses as being generally an improvement on the older ones. The negative mean difference of -2.05 indicates that, the respondents of Vodza were relatively more dissatisfied with the number of sleeping rooms.

Compensation - Utility and Infrastructural Development

A high satisfaction index of 4.72 on 9 variables under the component above indicates a general positive perception and appreciation of respondents on utility and infrastructural improvements due to the resettlement scheme.

Livelihood Restoration of the Residents of KSDP

With a total mean value of 4.2, 4.3 and 4.4, respondents from the three towns unanimously agreed that, the new settlement promotes communication within the neighbourhood; new settlement facilitates access to neighbours, and promotes community gathering among others.

On the other hand, however, a minimum level of social disarticulation (disintegration) as propounded by Cernea and McDowell (2000) has been noticed in this study. The disintegration is noted to be on two levels;

- (i) disintegration of extended family households (with responses of “moderately agree” at a mean score 3.34)
- (ii) Disintegration of original neighbours from the former settlement (*refer to chart 2 in appendix*) (with responses of “moderately agree” at a mean score 3.26).

From the study, the majority (50.9%) of respondents disagrees to the fact that, they live in a cluster with all the households from the original home; with Kedzi exhibiting the highest disagreement at a mean score of 2.7. Also, the majority (53.5%) of respondents disagree to the statement that, they live in a cluster with immediate neighbours from their former settlement resulting in they having to adapt to new neighbours. The respondents from the three towns further disagreed with the statement that, they live in the new units with all the members of their former households.

Using the mean responses as a proxy value for satisfaction measure, it can be inferred that, the respondents were satisfied with the improvement in communication, access to the new

neighbourhood, and improvement in community gathering. However, as a remedy to the levels of household disintegration observed in this study, it is prudent to consider the following point:

i. If the design did not allow for keeping to the organic and clustered nature of the original settlement, this disintegration could have still been avoided if conscious efforts were made to lift the arrangements of households in the same order into the new settlement.

Relationship between Community Participation and Satisfaction

The Spearman Rank Correlation result indicates that, there is positive correlation (0.691) between resident participation and physical compensation due to resettlement at a significance level of 1%. The same is true for utility and infrastructural development as well as livelihood restoration, living standards and security. This therefore implies that, any increase in participation could improve the satisfaction of residents regarding the above mentioned components in the new neighbourhood.

Relationship between Community Length of Stay and Satisfaction

The Spearman's Correlation Test proves, there is a positive correlation between the years of living in the new residents of the Keta Sea Defence area and satisfaction with the physical compensation. This implies that, the more years' residents spend in the new settlement, the greater their satisfaction of the physical compensation received. The same positive relationship is observed between satisfaction against utility provisions, infrastructural development, livelihood restoration and living standard. This implies that, the more the residents live in the new settlements the greater their associated satisfaction with the four components mentioned above. This factor should not be exploited by implementers of housing schemes but should rather serve as an additional venue of achieving higher levels of satisfaction when all basic needs of inhabitants are duly met. However, the longer the duration of living in the new settlements of the Keta Sea Defence area, the less the security enjoyed. These results were understandable, since longer years are associated with population growth which is also associated with security difficulties.

CONCLUSION AND RECOMMENDATIONS

Drawing inferences from indicators of user satisfaction as exploited by earlier researchers such as Lizarralde, Barrenstein, Dickmen and Oliver Smith, the summary of the conclusions in this study is as follows:

1. The occupancy rate of rebuilt houses was 97%.
2. The beneficiaries' perception of the location of the rebuilt project in comparison with the original settlement: accessibility, distance from the town is all highly satisfactory to the inhabitants. Additionally, 99% of respondents affirm the choice of repopulation as the suitable option.
3. The perception of the quality of the reconstructed houses in comparison with users' original dwellings: including monetary value, area, and number of rooms, building materials, functionality, and reliability of services among others has very low and unsatisfactory responses at a mean score of 1.93. Respondents, on the other hand, gave a relatively higher mean score of 3.15 in response of and admitting to the fact that, the new houses were generally an improvement on the old ones in terms of the provision of utility services and the infrastructure.
4. The perception of preventive measures for environmental stability in the project in comparison with those that existed in the original settlement includes structural and non-structural

measures as diversion canals, dams, etc. This indicator reflects the level of users' awareness and their perception of the efforts made by the State in disaster reduction. With regards to these features, about 70% of respondents strongly agree to an improved environmental stability resulting in a high mean score of 4.41.

5. The perception of the quality of the project infrastructure in comparison with the original settlement: it includes the rate of victims served by roads, water, electricity, gas, and sewer infrastructure. In this regards, responses utility and infrastructural development segment added up to a mean score of 4.37.

6. Offered/lost jobs: impacts of relocation on the creation and retention of jobs. Respondents were quite indifferent on this issue; they could not place a finger on their economic state after the project. This is because it is a multi-dimensional phenomenon and is affected by wider environmental conditions aside the project. Their responses, in this section however, have been observed to have a total mean score of 2.49.

7. From all indications, the satisfaction levels are generally high; however, the disgust expressed by inhabitants as observed in the results in the physical compensation seems to override the many positives. This is due to its significance and necessity as a basic needs (shelter). To the inhabitants and respondents in particular, when this need is not met adequately, the project 'has not achieved its set target,' a corroboration of Butterworth, Iain (2000) thoughts which indicates that, places and buildings are more than just props in people's lives; they are imbued with meaning and resonance, as they symbolize people's personal histories, inter-personal relationships, and shared events in people's extended relationships, families, communities and wider culture.

Relatively, the respondents of Vodza were more dissatisfied with the adequacy of the rooms whereas those of Kedzi were more satisfied with the general improvement of the new houses. Also, the respondents of Adzido were less dissatisfied with the size of the rooms of the new settlement. The residents were, however, satisfied with the adequacy of utility facilities, access to installed utility facilities, the affordability of the charges of utility, appropriateness of the water closets provided, the adequacy of day lighting and ventilation in the rooms. The respondents also indicated strongly that, repopulation is the best choice; they would have it no other way.

Additionally, community participation and length of stay has been identified to have positive relationship with satisfaction. This means participation been an integral part of the scheme, it is believed that, consideration for cultural practices such as ability to host funeral gatherings, other social events and living together with extended family in one compound could have guided allocation of families in the current design and as a result a positive ripple effect on residential satisfaction.

This study thus recommends that resettlement schemes are usually a turning point in many lives, it would therefore be important to indulge beneficiary participation in order to harness the benefits of community building, spirit of ownership and sense of belonging. Participation, therefore, has a high propensity to enhance residents' satisfaction at the repopulated towns of Vodza, Adzido and Kedzi. Again replacement package for resettlement of displaced communities in future should be complete in their provision especially of basic social and infrastructure facilities that brought cohesion in their existing communities. Further, to forestall and maintain the sanctity of the

community, technical assistance should be provided for the resettled to streamline all extensions and modifications. Lastly it is recommended that further research should be done into the effects the resettlement has had on their social life and family cohesion.

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APPENDIX 1

Comparison of Responses on Physical Compensation of the Project in the Three Study Areas

	Vodza			Adzido			Kedzi		
	New	Old	Dif. mean	New	Old	Dif. mean	New	Old	Dif. mean
The number of sleeping room is adequate	1.88	3.93	-2.05	1.63	3.44	-1.81	1.38	2.76	-1.38
The room sizes are adequate	2.09	4.02	-1.93	1.6	3.64	-2.04	2.27	2.82	-0.55
The size of land given is adequate	2.11	4.13	-2.02	2.36	3.45	-1.09	1.86	2.39	-0.53
New house is generally an improvement on the old one	3.33	2.14	1.19	3.16	2.13	1.03	2.62	1.63	0.99

Source: Field Survey, 2013.

Rank: “5”-Strongly Agree, “4”- Agree, “3”– moderately agree,”2” - Disagree, and “1” - Strongly Disagree.

APPENDIX 2**Compensation - Utility and Infrastructural Development**

	SA	A	MA	D	SD	Mean
Utility provisions are adequate	86(37.9)	96(42.3)	14(6.2)	13(5.7)	18(7.9)	3.96
Access to utility installations is easy and affordable	94(41.4)	86(37.9)	26(11.5)	8(3.5)	13(5.7)	4.06
Utility charges are affordable	89(39.4)	71(31.4)	39(17.3)	27(11.9)		3.98
Kitchen space provided facilitates the use of your former fuel	104(46.0)	87(38.5)	19(8.4)	5(2.2)	11(4.9)	4.19
The water closets provided are appropriate	128(56.4)	67(29.5)	22(9.7)	7(3.1)	3(1.3)	4.37
The water closet provided is an improvement on what you had	156(68.7)	47(20.7)	18(7.9)	4(1.8)	2(0.9)	4.55
Day lighting is adequate	186(81.9)	32(14.1)	2(0.9)	2(0.9)	5(2.2)	4.73
Ventilation in the room is adequate	196(86.3)	18(7.9)	8(3.5)	1(0.4)	4(1.8)	4.77
Access roads and paths into the community and houses respectively are adequate	192(84.6)	20(8.8)	9(4.0)	4(1.8)	2(0.9)	4.74

Source: Field Survey, 2013.

Rank: “5”-Strongly Agree, “4”- Agree, “3”– moderately agree,”2” - Disagree, and “1” - Strongly Disagree.

APPENDIX 3**Livelihood Restoration of the Residents of KSDP**

Variables	Vodza	Adzido	Kedzi	Total
The new settlement promotes communication with your neighbourhood	4.0	4.3	4.7	4.2
The arrangement in the new settlement facilitates access to neighbours	4.0	4.4	4.6	4.3
The new settlement promotes community gathering	4.3	4.5	4.6	4.4
You are living in a cluster with your households from the original home	2.9	3.9	2.7	3.3
You are living in this new unit with all members from your former household2	1.5	1.1	1.5	1.4
You live in a cluster with immediate neighbours from your former settlement	3.4	3.4	3.0	3.3

Source: Field Survey, 2013

Rank: “5”-Strongly Agree, “4”- Agree, “3”– moderately agree,”2” - Disagree, and “1” - Strongly Disagree.

APPENDIX 4

Correlation between Participation and Satisfaction with Life and New Facilities in the New Neighborhood

	Participati on	Physical compensati on	Utility & infrastructu re	Liveliho d Restoratio n	Living Standar ds	Securit y
Participatio n Sig. (2- tailed) N 228	1					
Physical compensatio n Sig. (2- tailed) N 228	.691*** .000	1 228				
Utility & infrastructu re Sig. (2- tailed) N 228	.577*** .000	.610*** .000	1 228			
Livelihood Restoration Sig. (2- tailed) N 228	.641*** .000	.628*** .000	.677*** .000			
Living Standards Sig. (2- tailed) N 228	.111** .047	.092 .101	.046 .406	.048 .390	1	
Security Sig. (2- tailed) N 228	.261*** .000	.193*** .000	.139*** .004	.147*** .002	-.034 .545	1 228

Source: Output from SPSS, 17

***. Correlation is significant at the 0.01 level (2-tailed).

**. Correlation is significant at the 0.05 level (2-tailed).

*. Correlation is significant at the 0.10 level (2-tailed).