APPROACHES, DESIGNS AND SOCIO-CULTURAL IMPLICATIONS OF POST-DISASTER HOUSING: LESSONS FROM ACEH TSUNAMI RECONSTRUCTION.

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INTRODUCTION

The 2004 tsunami disaster in Aceh destroyed man-made environments massively in addition to unimaginable human misery. It was one of the largest natural disasters in Aceh’s history. Housing and settlement sector were tremendously affected. Some Acehnes lost their land and even Aceh’s coastline was changed. Others found it hard to locate their lots in the ruined land. Many of them had no proof that the lost land was theirs.1 Up to 139,195 homes were destroyed or severely damaged, along with 73,869 ha of land with varying degrees of productivity.2 While natural disaster transformed much of Aceh’s morphology of urban space, the rehabilitation and reconstruction process that followed continued transforming the typology of domestic space in Acehnese towns and villages, profoundly affecting Acehnese socio-cultural life and society at large. In particular, a fundamentally new type of housing physically and practically changed social and cultural ways of living in Aceh. This paper examines how domestic homes and living space were formed and deformed by large scale post-tsunami housing reconstruction projects in Aceh and how post-tsunami new living spaces for private families influenced family cultures, lifestyles, do’s and don’ts, habits, customs and everyday life. The overall study proposes a new type of action for post-disaster housing reconstruction based upon the real housing needs of stricken communities which takes into account non-physical aspects of family practices such as cultural living needs and desires, lifestyles and habits as well as physical aspects of location, typology, size and lay-out design of housing concepts. In addition to short-term ‘supplying roofs over heads’, such an optimised approach respects the longer term well-being and cultural survival of individual post-disaster survivors as well as of communities at large. It is also shown how this additional socio-cultural approach can be made successfully workable worldwide.

LITERATURE REVIEW

Natural disasters often have severe consequences and changes to the built environments. It may transform the morphology of urban environment and domestic space of each and every person hit. This transformation has short and long term effects. Socio-cultural individual life as well as community and societal life at large will be involved. Individual socio-cultural life, community life, as well as societal life will be involved. Short-term impacts of disasters and of rehabilitation and reconstruction are getting most of the attention while the long-term effects get far less. As Chang3 explicitly states that is because policymakers and ‘recovery actors’ do not adequately understand long-term consequences of short-term post-disaster help and reconstruction.
Many case studies studying natural disasters are approaching post-disaster rehabilitation and reconstruction in a top-down or bottom-up way. In top-down approach, public authorities, financial and technical donors, and building contractors are the ones that set the scene and decide what to do and how to do it. In the bottom-up approach, the owners of the homes to be built, the community in which the houses will be located, they are engage in the process. Top-down approaches are believed to be simpler and less time consuming. Davidson, Johnson, et al⁴ argue that in this approach prompt decisions, quick processes and little delays are possible. With the absence of owner/tenant participation, new houses can be made available to survivors within a few months. However this approach threatened natural habitat as well as socio-cultural life of the people. Natural habitat was degraded.⁵ Furthermore, future developments will suffer since there is ‘no active role for beneficiaries to play in the development of their own future’.⁶ Too often reconstruction authorities and actors do not include traditional contexts and local values in their top-down approach. In bottom-up approaches, communities are involved in different roles and in several of the building process. The community build their new houses themselves and some external help may be then needed from financial and technical actors.⁷ It gives greatest possible success to communities since their participation is part of the general political process which influence decision that shape the community.⁸ In Aceh’s post-tsunami housing projects, the community-based development approach made its mark in housing reconstruction. Acehnese communities were the ones that determined housing needs and wants and decided upon priorities themselves. ⁹ In their bottom-up approach Acehnese beneficiaries played active roles and were quite important to help set project results. They turned the ‘victim’ who passively received humanitarian aid into an active actor.¹⁰ This approach has shown to be less costly due to lower labour costs and it will enable people to occupy their new home before building their new home is finalised and before it is furnished.¹¹ It also builds community resilience and strengthens communal social bonds. Barenstein¹² also finds that bottom-up approaches help and re-establish confidence and pride of traumatic survivors, by encouraging them to be actively involved and able to participate in the building of their own new homes. It makes people stronger and self-confident as they see their needs and wants materialised, Barenstein observes additionally. By satisfying individual beneficiaries and communities more this way, future sustainability is also supported more. With adequate financial and technical help, self-built houses will not only be more sustainable, but people will also be interested to make necessary future additions and make sure that necessary repairs will be done. And it is quite beneficial intangibly that local culture and identity will be also being preserved better.¹³ Continuity of traditions and ways of life are also more secured. However, this approach may take more time and mostly cannot do without extensive facilitation.¹⁴ And it may also not at all be easy to include qualified actors play roles of facilitation. In Aceh’s recovery, professionalism has been a problem too often due to lacking of professional people, religious and community leaders, social workers, teachers and civil society representatives.¹⁵ Community structures were out of order as they were spread all over the place in emergency barracks and tented camps.¹⁶ This made facilitation processes for the bottom-up rebuilding communities more difficult. In this approach, the technical quality of the building is not always secured. In a number of cases, traditionally built buildings have collapsed.¹⁷ Various actors play a role in post-disaster housing reconstruction programs, such as government agencies, international donors, non-governmental organizations (local, national, international), local institutions and administrative bodies, architects and builders, and last but not least, ‘the locals’, local communities and individual survivors. Actors have different capacities, functions and roles. Actor actions also depend upon the type of building approach used. In different countries and regions, conditions and situations, roles may be different. In a top-down approach governmental authorities and agencies play a bigger role than in a bottom-up approach. In bottom-up approaches survivors and their communities have important roles to play. In Aceh’s post-tsunami housing reconstruction, BRR (Agency for Rehabilitation and Reconstruction of Aceh and Nias) was the main reconstruction authority. It coordinated planning and building actions and executed much of it itself in close cooperation with professional consultants.¹⁸ BRR’s role was strongly driven by ‘emergency aid drivers’ such as international and national NGOs.¹⁹ In addition to international aid...
agencies and non-governmental organizations, consultants and contractors, architects and builders, play essential roles in reconstruction activities.

**METHODOLOGY**

A comparative case study method was employed as the main methodology for this study. A number of houses in main concentrated areas of post-disaster housing reconstruction projects in Aceh’s capital city of Banda Aceh and Aceh Besar outer district were selected for the analysis. Three categories were used, one based upon the level of physical transformation compared to pre-tsunami times. Secondly, the immediate post-tsunami reconstructed (donated house). And thirdly, what home changes were made following the initially reconstructed situation during follow-up years. The analysis focused on pre-tsunami times (before 2004), immediate/follow-up after the tsunami of 26 December 2004, and the post-tsunami years until the end of Aceh’s rehabilitation and reconstruction process (2005-2010).

The primary data were collected through field observations and interviews. The observation focused on the physical transformation of urban settlements in post-disaster housing reconstruction project areas at domestic level (the layout, typology and morphology), the changes of family culture, lifestyles and habits of the affected community. The processes and approaches of housing reconstruction project were also analysed. The analysis on transformation of typology and morphology was focused at micro level (dwelling unit) and its context within neighbourhoods. The main object for analysis concentrated on individual houses. Other elements of urban settlements such as public buildings, schools, offices, markets, open spaces, worship buildings, and so on were also examined to enrich and support the analysis. The in-depth interviews were carried out to get a detailed overview on social-cultural changes of the community related to domestic activities and values. Secondary data relied on desk reviews based upon related theories and historical data on the domestic space and post-disaster housing reconstruction found in books, journals, articles, reports, images, maps, photographs and related materials. The main target group of the survey was the group of tsunami survivors who received donated houses. Secondary target groups were authorities, policy makers, local leaders, funding agencies, NGOs and research centres.

**FINDINGS AND DISCUSSION**

In Aceh’s post-tsunami housing reconstruction particularly in the selected houses used, this study shows that 80% of the houses had been transformed into modified houses during 5 to 7 years after they were newly built. Modifications realised were of a major, moderate or minor nature. 55% of the houses had major modifications, 22% had moderate modifications and 5% only had minor modifications. 18% of the rebuilt houses had no modifications at all. In terms of the approach, most of the houses built in a top-down approach were considered to need and got major improvements or had rooms/spaces added by the owner. Houses built in a bottom-up approach only required minor additions or improvements. The space mostly modified was the kitchen. All of the modified houses did modify their kitchen. The family room, living room, bedrooms and the veranda also had a high priority on the wish lists. As to basic human needs, toilets ranked high. Gender space segregation was an important consideration as well. Most of case studies also showed that the added living room in the back of the house was an area specially earmarked for women following Acehnese housing traditions. Apart from daily family contacts and activities, the living room was also used for celebrations and for cultural and religious ceremonies. As the kitchen was a typical women’s place, without a kitchen or with an inadequate kitchen only, that affected gender segregation directly. Without a special space for women, the living room had to become a mixed space for men and women, another breakdown of tradition. The absence of a kitchen in the design of donated houses affected the family’s daily food preparing and dining and the occasional cultural and religious events at home. It also impacted daily family cooking and dining practices. For example, joint family dining was gone following a kitchen split into two and old time preparing and cooking at home changed, into buying and eating fast food bought at restaurants and food stalls. Inadequate verandas also impacted social contact with neighbours, visitors and guests. Religious activities, Islamic prayers especially, were another family
practice that was affected by inadequate domestic space changes after the tsunami. Insufficient spaces to conduct joint prayer made this old practice disappear. In the donated post-tsunami house the living room was too small and could not accommodate joint family praying.

Many types of donated houses had no family room. That directly impacted the function of the living room, after the tsunami family room activities had to move to the living room. Living room contacts with guests and visitors had to be moved to the veranda. When a living room was too small it could not accommodate the functions of the family room. Consequently some practices suffered. When donor agencies provided inadequate or too little space multifunctional rooms had to help the family out sometimes. This mostly applied to the living room. The living room was not only used for receiving guests, but also used as a family room got together and as a dining room where the family had diner jointly. Sometimes the living room also was a study room for the children, when the bedrooms were too small to accommodate children’s studying or doing their homework. Mixed use not only applied to living rooms, kitchens also suffered when they had to use as a service area, a laundry and a dining room. When too many functions were done in the kitchen, there was not enough space left for having family meals there jointly. Then again, joint dining moved to the living room. Old time practices were kept up, but had to be practised in a different area.

Social practices not only changed because of changed house sizes and lay-outs, but also when a stilted typology house became a ground level type of house or vice versa. When house changed from a stilted construction into a ground floor house, daily social practices and cultural religious activities that were formerly carried out in the space underneath the stilted house, such as contacts with neighbours, Qur’an teaching and reciting and Islamic Holiday Celebrations, moved to the living room of the donated ground level house, making the living room into a multifunctional room. And the other way round, when the typology of the house was transformed from a landed ground level typology into a stilted one, the family got new extra space underneath the house that they did not have before the tsunami. This extra space was now used for some of their practices that could not be properly accommodated on the second floor. Such as some family practices and contacts with neighbours, relatives and friends. The space underneath the house became sort of a veranda, a living room, a family room, a kitchen and a dining room.

Housing reconstruction probably accomplished one thing at least. And that is fairly quickly supplying enough roofs over tens of thousands of Acehnese heads. That sure is an accomplishment. To a large extent it is an accomplishment of a quantitative nature. However, this study concludes that the facilitating public authorities and the major donor agencies involved in Aceh’s post-tsunami housing reconstruction have not unfortunately accomplished a totally successful mission. Important total needs and wants of tsunami survivors, including important socio-cultural needs and wants have not been fully accommodated or not adequately. The diversity of beneficiaries and their families had not been really considered in the housing concepts of donated houses. They did not really reflect the socio-cultural characteristics either and the differing needs and wants of the respective inhabitants. This does not help people and the communities they live in to preserve their true identity. In fact, local distinctiveness embodied in socio-cultural everyday life for hundreds of years was greatly endangered.
CONCLUSION

Communities everywhere in the world and local communities especially have characteristics that reflect and represent the identity of the very community. These characteristics are strongly related to local contexts and values and norms that mostly differ from characteristics elsewhere. These characteristics amongst others include people features in that community, the geographical location, socio-economic conditions, political and religious situation and development levels at large. Following a natural disaster quite a few of these characteristics run the risk of being threatened by rehabilitation and reconstruction interventions in post-disaster times, particularly when these interventions do not appropriately tie in with norms and values and contexts of the victimised people. This was proven in post-tsunami Aceh after 2004. This study proposes a new concept of post-disaster housing reconstruction attitudes and a new type of action practices based upon more complete real local down-to-earth contexts and concerns. Those should become part of the active resource of architects, planners, builders, agencies and special facilitators that matter in post-disaster problem solving situation. A concept that takes housing needs and wants of badly hit communities and of traumatised individual survivors really serious, by adding socio-cultural facts of life to physical (mostly technical) aspects such as location, typology, size and lay-out of housing concepts. The most satisfying building results prove to be the ones that regard and integrate culturally sensitive involvement of all parties involved in the process, a building processes which help and bring survivors back to as happy a normal life as before.

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