

Disaster mitigation lessons from “build back better” following the 26 December 2004 Tsunamis

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ABSTRACT: Following the 26 December 2004 tsunami disaster around the Indian Ocean, many organisations and governments involved in the reconstruction subscribed to the phrase “build back better”. Different definitions and interpretations of this phrase led to widely varying actions and outcomes in the ongoing reconstruction, particularly with regards to shelter and settlement. Drawing on field experience from Aceh, Indonesia and Sri Lanka, this paper examines disaster mitigation lessons from the theory and practice of “build back better”, discussed in three categories:

1. Different meanings of “better”.
2. Raised expectations.
3. Thinking beyond tsunamis.

The framing used is the combination of disaster relief principles articulated in 1982 and the tsunami “build back better” propositions developed in 2006. Based on the field evidence, alternative phrases are proposed and discussed. Overall, the most significant concern with “build back better” is that it tried, but failed to invent a new concept for post-disaster aid and, instead, caused confusion and practical difficulties in post-tsunami disaster relief and disaster mitigation, creating problems which should not have arisen given previous knowledge and experience.

Keywords: build back better; disaster mitigation; settlement; shelter; tsunami; urban protection

1 INTRODUCTION

On 26 December 2004, an earthquake off the coast of Indonesia led to tsunamis which propagated across the Indian Ocean, killing over 250,000 people in more than a dozen countries. The disaster necessitated extensive post-disaster reconstruction of settlement and shelter. Seeking to rebuild old communities and to build new communities, the previously coined phrase (e.g. Monday, 2002) “build back better” or “building back

better” came to define and represent the efforts (e.g. James Lee Witt Associates, 2005; UNICEF, 2005; USINFO, 2005; Clinton, 2006).

As detailed by Kennedy et al. (2008), “build back better” was used to imply the need to link humanitarian relief and post-disaster reconstruction with longer-term disaster mitigation and vulnerability reduction efforts in order to ensure that reconstruction would not lead to conditions which could result in a similar disaster recurring. Establishing this link

is particularly challenging regarding post-disaster settlement and shelter (e.g. Cuny, 1983; Shelterproject, 2003). The preferred principles to adopt have been known for some time, because after Turner's (1972: 148) "housing as a verb", Davis (1978: 33) proposed that 'shelter must be considered as a process, not as an object'. Especially for "shelter after disaster" (the title of Davis, 1978), shelter is not the structure only, such as a particular type of tent or house, but is an ongoing and interconnected series of tasks or actions which fulfil the needs of (from Kennedy et al., 2008):

- (i) Physical and psychological health including protection from the elements and a feeling of home and community.
- (ii) Privacy and dignity for families and for the community.
- (iii) Physical and psychological security.
- (iv) Livelihood support.

During post-disaster reconstruction, before permanent communities are ready, these needs still exist and can be met through adequate settlement and shelter. The term "transitional settlement and shelter" (Corsellis and Vitale, 2005) is now used to express the transition phase between (i) meeting immediate, emergency needs and (ii) completing new communities and infrastructure where disaster survivors will settle. Examples of transitional settlement and shelter are: lacing displaced people with willing host families, voluntarily or with compensation; planned camps with simple structures that allow for easy upgrade; and trailers or mobile homes set up in the yards of ruined homes.

2 METHODS

This paper uses field work evidence from tsunami-affected locations to examine disaster mitigation lessons from the theory and practice of "build back better", particularly with respect to settlement and shelter. The field work was done from the beginning of 2005 to the end of 2007 and focused on operational tasks for several non-governmental organisations, which are not identified here in order to preserve confidentiality, mainly attempting to implement transitional settlement and shelter. The geographical areas covered were Aceh and Sri Lanka, which were amongst the worst hit by the disaster. The experiences in these places have been compiled for the analysis and discussion presented here.

The discussion is completed based on the principles for post-disaster settlement and shelter as described by Davis (1978) and then revised in UNDRO (1982). In the list of principles below, the first phrase, in quotation marks, is taken directly from UNDRO (1982:

3-4). The words after the colon paraphrase the explanation given in UNDRO (1982):

- Principle 1. 'Resources of survivors': Assistance should not duplicate what can be provided by the survivors, their friends, and their families.
- Principle 2. 'Allocation of roles for assisting groups': Roles should be assigned logically and by the local authorities.
- Principle 3. 'The assessment of needs': Assessments should focus on survivors' needs, not on property damage.
- Principle 4. 'Evacuation of survivors': Mandatory evacuation should be avoided, but voluntary movement including return should be assisted.
- Principle 5. 'The role of emergency shelter': Imported shelter does not always play a primary role, because local materials and techniques are preferred by the recipients.
- Principle 6. 'Shelter strategies': Many options exist for transitional shelter and all should be considered in order to select the best one, but the reconstruction process should start as soon as possible.
- Principle 7. 'Contingency planning (preparedness)': Post-disaster shelter needs should be considered and planned for before an event strikes.
- Principle 8. 'Reconstruction: the opportunity for risk reduction and reform': Post-disaster reconstruction should be used to improve communities through reducing the risks faced.
- Principle 9. 'Relocation of settlements': Complete relocation rarely works, but reconstruction should consider avoiding the most hazardous areas.
- Principle 10. 'Land use and land tenure': Reconstruction must consider these issues.
- Principle 11. 'Financing shelter': Disaster-affected people should participate in financing the reconstruction.
- Principle 12. 'Rising expectations': Shelter assistance should not raise expectations of the reconstruction beyond what can be realistically achieved.
- Principle 13. 'Accountability of donors to recipients of aid': Assisting groups must be accountable to the aid recipients.

Table 1. Comparing Clinton's (2006) propositions with UNDRO's (1982) principles.

Propositions from Clinton (2006)	1	2	3	4	5	6	7	8	9	10
Principles from UNDRO (1982)	1, 5, 11	2, 3, 10, 13	7, 8, 9	2, 14	3	2, 13, 14	2, 13, 14	11	13	7, 8, 9

Principle 14. 'Guidelines for the local level':
Qualified, local personnel should develop shelter guidelines for their particular situation.

Proposition 10: Good recovery must leave communities safer by reducing risks and building resilience.'

These principles are currently in the middle of being revised to ten principles by the Geneva-based Shelter Centre (<http://www.sheltercentre.org>) with the support of the transitional settlement and shelter sector.

Here, UNDRO's fourteen principles are matched with Clinton's (2006) ten propositions which tended to be used to define "build back better" in the tsunami's aftermath (Table 1). The propositions directly quoted from Clinton (2006) are:

- Proposition 1: Governments, donors, and aid agencies must recognize that families and communities drive their own recovery.
- Proposition 2: Recovery must promote fairness and equity.
- Proposition 3: Governments must enhance preparedness for future disasters.
- Proposition 4: Local governments must be empowered to manage recovery efforts, and donors must devote greater resources to strengthening government recovery institutions, especially at the local level.
- Proposition 5: Good recovery planning and effective coordination depend on good information.
- Proposition 6: The UN, World Bank, and other multilateral agencies must clarify their roles and relationships, especially in addressing the early stage of a recovery process.
- Proposition 7: The expanding role of NGOs and the Red Cross/Red Crescent Movement carries greater responsibilities for quality in recovery efforts.
- Proposition 8: From the start of recovery operations, governments and aid agencies must create the conditions for entrepreneurs to flourish.
- Proposition 9: Beneficiaries deserve the kind of agency partnerships that move beyond rivalry and unhealthy competition.

Not all principles are covered by the propositions, but that is in part because Clinton (2006) applied "build back better" beyond UNDRO's (1982) focus on shelter and settlement. As well, sometimes one document is more general than the other. For instance, "the conditions for entrepreneurs to flourish" (Proposition 8) implies private enterprise rather than Principle 11 which encompasses, but does not limit, shelter financing to entrepreneurs. Similarly, Propositions 6 and 7 divide multilateral agencies from non-profit groups, whereas the principles emphasise the need for bottom-up approaches irrespective of the outside organisation.

Table 1 shows that Clinton (2006) does not provide any material substantively different from UNDRO (1982) and, based on the 24 years of experience between the two documents, it is questionable whether or not improvements have been made.

3 RESULTS AND DISCUSSION

For brevity, only limited examples can be provided, so they are focused directly on meanings and interpretations of "build back better" as experienced during the field work. These are provided as three categories:

1. Different meanings of "better";
2. Raised expectations;
3. Thinking beyond tsunamis.

3.1 *Different meanings of "better"*

The use of "better" led to subjective viewpoints regarding the word's meaning. Many organisations working in the tsunami-affected areas were focused on longer-term goals and wider aims, as articulated in UNDRO (1982) and Clinton (2006). Examples include making communities less vulnerable to disasters; addressing some development concerns simultaneously with reconstruction; offering more accountability of external organisations to the local population; increasing participation of those affected by the disaster and by the reconstruction; and being able to implement established field standards such as Sphere (2004).

In contrast, many local organisations and disaster-affected people understood "better" to include

elements such as appearing to be more affluent, being more modern, or emulating Western construction styles. This interpretation was exemplified by the selection of building materials in Aceh. Traditional building techniques used timber, with a shift in recent decades to softwood from hardwood due to population expansion and, in turn, decreased availability and increased expense of hardwood. External organisations wished to rebuild the pre-tsunami building stock, which they saw as being mainly softwood, making it “better” by addressing some risk reduction and development concerns. The Acehnese preferred hardwood or masonry dwellings because “better” was identified as being more affluent or appearing to be more modern.

In many instances, people removed key structural components from their new houses in order to save materials or money. They then used these components to extend the building or for fancy finishes, to appear more affluent. Similarly, families were seen reducing the amount of cement used in bricks and mortar, thereby decreasing the houses’ earthquake-resistance. The cement could then be used for extensions or for external ornamentation, which not only has aesthetic value but also makes the family appear to be modern and affluent. In these cases, “building back better” meant that aesthetics and an affluent appearance dominated safety.

Another factor in these changes was that traditional building skills were based on timber rather than masonry, so masonry dwellings had a higher likelihood of displaying unsafe practices and poor workmanship. As well, masonry buildings are less suited to Aceh’s climate and pose more risk in the event of an earthquake than do timber dwellings. The definition of “better” led to different selections of building materials depending on the definition adopted for “better”.

Discussions with local officials and locals receiving shelters in both case study sites demonstrated the variety of meanings of “better”. Examples of views which were articulated upon hearing “build back better” (usually in their native language which was generally Achenese, Bahasa, Sinhalese, or Tamil) were:

- Expectation of indoor plumbing and electricity in free dwellings where those services had not existed before; sometimes having a kitchen and bathroom were specifically of interest;
- A larger house, larger rooms, and/or more rooms;
- Improved access to improved education and health facilities;
- Appearing to be of a higher socio-economic status (e.g. masonry rather than wood irrespective of the safety and comfort consequences);
- Legal land ownership;
- A better location than before, such as easy access to market or a hospital or not in areas deemed to be vulnerable to flooding alongside a river or along the coast;

- Safe and secure;
- Adhering to the Western concept of a nuclear family with each married couple or bereaved spouse plan their children having a right to a dwelling rather than a large extended family living in the same dwelling

3.2 Raised expectations

The different interpretations of “build back better” led to expectations being raised which were then challenging to meet, exactly the problem which Principle 12 warns against. Part of the challenge in Sri Lanka and Aceh arose due to limits with community participation exercises, noting that community participation is appropriate as espoused by Principles 1, 5, and 10 and by Proposition 1. The full settlement and shelter process, and especially timescales for enacting that process, were not always communicated or understood, so “build back better” led to differing expectations regarding the reconstruction and the reconstruction speed.

Three main, but linked reasons emerged for why that happened, despite the Principles and Propositions. First, the large scale of the disaster stretched the personnel and training resources of international organisations that often could not provide enough staff trained and experienced in shelter and settlement issues. Second, working with inexperienced government officials—who had often lost family members, their offices, and their homes to the tsunami—plans were created and presented to communities promising timelines and results which could not be met. Third, in many places in Aceh and Sri Lanka, the workforce was largely the homeowners themselves, as part of the participation and ownership process, meaning that individuals and families created their own expectations of “build back better” and then, often supported by local officials, expected international organisations to fulfil those expectations.

Overall, “build back better” appropriately tried to include communities in the planning and construction of settlement and shelter, yet did not fully account for the time and personnel necessary to train and monitor a workforce (local, national, and international) previously unskilled in shelter and settlement issues. The increasingly unfulfilled expectations, in terms of both timeline and final result, led to an increased focus on finishing construction irrespective of quality and people pursuing their own construction irrespective of deficiencies which might result.

3.3 Thinking beyond tsunamis

Disaster mitigation measures are frequently enacted to counter the disaster which has just occurred, regardless of the consequences for other possible events. Many organisations and government officials interpreted

"build back better" to mean that a similar tsunami disaster should never happen again, even though that is only part of Principles 7, 8, and 9 and Proposition 10. The most obvious "build back better" measure against tsunamis was taken: banning development near the shoreline.

"Buffer zones" or "exclusion zones", sometimes labelled according to support for or against the measure, were instituted and changed arbitrarily and inconsistently in Aceh and Sri Lanka. This meant that the land available for permanent settlement was not known or it changed during the transitional phase. The transitional-to-permanent connection was weakened.

Focusing exclusively on the just-experienced disaster, in this case the tsunami inundation zones, has a strong potential for exacerbating existing vulnerabilities or for creating new and unnecessary vulnerabilities (Lewis, 1999; Wisner et al., 2004). In Aceh and Sri Lanka, some previously coastal communities were rebuilt inland, severing the connection between fishers, their equipment and knowledge of the sea. In Sri Lanka, ActionAid (2006) made accusations that coastal land off-limits for local reconstruction was being allocated for hotel construction. Local livelihoods would become less focused on subsistence and more dependent on external investment, creating vulnerabilities based on social inequities and economic dependence.

Finally, few locations for transitional or permanent settlement had multi-hazard assessments completed, so reducing the tsunami hazard through relocation could place a community in areas of increased hazard from other events such as earthquake-induced liquefaction, freshwater flooding, and landslides. "Build back better" was frequently interpreted in the context of only the 26 December 2004 tsunamis—and in Aceh, at times, even forgetting the earthquake, which does not fully match the intent of the Principles or the Propositions.

4 CONCLUSIONS

The observations made during the field work suggest that some concern in successfully implementing the "build back better" approach emerged from the phrase itself. The attempt to use and market a catchy phrase seemed to be the problem more so than attempts by personnel on the ground to implement it according to their own interpretation and experiences. For example, many organisations used Sphere (2004) and Corsellis and Vitale (2005) which support the "build back better" Propositions, but which were developed using UNDRO (1982), preceding Clinton (2006).

Choosing "better" as the main adjective was unhelpful in that it generated confusion, as demonstrated by the different interpretations of the word. Other

possibilities which could have been considered include "build back safer" (Kennedy et al., 2008) and "build back sustainably". "Safer" helps to focus on reducing risk and creating communities which will not be devastated by the next extreme event, but it fails to define just who will be safer and for how long. "Sustainable" and its variations are frequently criticised as being subject to widely disparate interpretations.

The phrase "build back safer, stronger, and smarter" was used in the USA following Hurricanes Katrina and Rita in 2005, but both "stronger" and "smarter" suffer from the concerns articulated for "better". Further misunderstandings could also result. For example, in UK English, "smarter" means "neater" or "tidier" in addition to "more intelligent". "Stronger" is not necessarily appropriate for dealing with disasters over the long-term, as exemplified by the "Living with Risk" approach (ISDR, 2004) and the movement away from the paradigm of "protection from nature" (e.g. Kelman and Mather, 2008).

Given that these phrases are English in origin, and some subject to different English interpretations, translation of these phrases to other languages—Achenese, Bahasa, Tamil, and Sinhalese for the cases discussed—would naturally be expected to generate confusion and even more interpretations. The evidence presented from the case study sites reveals such confusion.

Rather than succumbing to the marketing glee which often pervades the "humanitarian business" and which can marginalise dedicated and competent personnel, it might be appropriate to avoid a single tagline. Instead, a set of principles or guiding statements could be emphasised, with UNDRO (1982) forming the most solid basis, albeit requiring the update which Shelter Centre is undertaking. While there were few substantive changes between UNDRO (1982) and Clinton (2006), much has been learned between the two documents and many of the concepts have been more formally detailed, extensively investigated theoretically and in the field, and critiqued. Examples of more formal labels which have substantively influenced disasters and development work since UNDRO (1982) are the sustainable livelihoods approach (Chambers and Conway, 1992; Chambers, 1995), sustainable development (Brundtland, 1987), the entitlement approach (Sen, 1981), "do no harm" in humanitarian work (Anderson, 1999), and a rights-based approach (COHRE, 2005). Many of these strategies are actively applied, such as in Sphere (2004) and Corsellis and Vitale (2005).

This pre-tsunami work suggests that perhaps the most significant concern with "build back better" is from an academic perspective: it tried to invent something new when something new was not needed. Instead of ten new Propositions, the fourteen original Principles could have been applied in the field

immediately, while experiences since the creation of the Principles could have been used to support or discredit where appropriate.

This post-tsunami field evidence demonstrates how discrepancies in interpretation led to practical difficulties, and created problems which should not have arisen given previous knowledge and experience. Other disaster mitigation efforts—for tsunamis, floods, and other events—should heed these lessons to avoid “build back better” attempts that, in the end, only make the situation worse.

REFERENCES

- ActionAid (2006). *Tsunami Response: A Human Rights Assessment*. ActionAid, Johannesburg.
- Anderson M. B. (1999). *Do No Harm: How Aid Can Support Peace—Or War*. Lynne Rienner Publishers, London.
- Bruntland G. (ed.) (1987). *Our common future: The World Commission on Environment and Development*. Oxford University Press, Oxford.
- Chambers R. (1995). Poverty and Livelihoods: Whose Reality counts? *Environment & Urbanization*, 7(1), 173–204.
- Chambers R. and Conway G.R. (1992). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*: Discussion Paper 296. Institute of Development Studies, Brighton.
- Clinton W. J. (2006). *Lessons Learned from Tsunami Recovery: Key Propositions for Building Back Better*. United Nations Secretary-General's Special Envoy for Tsunami Recovery, United Nations, New York.
- COHRE. (2005). *The Pinheiro Principles: United Nations Principles on Housing and Property Restitution for Refugees and Displaced Persons*. COHRE (Centre on Housing Rights and Evictions), Geneva.
- Corsellis T. and Vitale A. (2005). *Guidelines for the Transitional Settlement of Displaced Populations*. Oxfam, Oxford.
- Cuny F. (1983). *Disasters and Development*. Oxford University Press, Oxford.
- Davis I. (1978). *Shelter After Disaster*. Oxford Polytechnic Press, Oxford.
- ISDR (2004). *Living with Risk: A Global View of Disaster Reduction Initiatives*. United Nations ISDR (International Strategy for Disaster Reduction), Geneva.
- James Lee Witt Associates (2005). *Building Back Better and Safer: Private Sector Summit on Post-Tsunami Reconstruction*. James Lee Witt Associates, Washington, DC.
- Kelman I. and Mather T. A. (2008). *Living with volcanoes: The sustainable livelihoods approach for volcano-related opportunities*. *Journal of Volcanology and Geothermal Research*, in press.
- Kennedy J., Ashmore J., Babister E. and Kelman, I. (2006). *The Meaning of 'Build Back Better': Evidence from Post-tsunami Aceh and Sri Lanka*. *Journal of Contingencies and Crisis Management*, in press.
- Lewis J. (1999). *Development in Disaster-prone Places: Studies of Vulnerability*. Intermediate Technology Publications, London.
- Monday J. L. (2002). *Building Back Better: Creating a Sustainable Community After Disaster*, *Natural Hazards Informer*, (3), 1–12.
- Sen A. (1981). *Poverty and famines: An essay on entitlement and deprivation*. Oxford University Press, Oxford.
- Shelterproject (2003). *Report on the Transitional Settlement Sector*. Shelterproject, Cambridge.
- Sphere (2004). *Sphere Humanitarian Charter and Minimum Standards in Disaster Response*. Sphere Project, Geneva.
- Turner J. F. C. (1972). *Housing as a Verb*. In: *Freedom to Build: Dweller Control of the Housing Process*. J. F. C. Turner and R. Fichter (eds.), New York: Macmillan Company, pp. 148–175.
- UNDRO (1982). *Shelter After Disaster, Guidelines for Assistance*. UNDRO (United Nations Disaster Relief Organisation), New York.
- UNICEF (2005). *Building Back Better: A 12-Month Update on UNICEF's Work to Rebuild Children's Lives and Restore Hope since the Tsunami*. UNICEF (United Nations Children's Fund), New York.
- USINFO (2005). *Tsunami Relief Done Well Becomes Future Model*, Clinton Says. US Department of State's Bureau of International Information Programs. Washington, DC. <http://usinfo.state.gov/gi/Archive/2005/Apr/26-105009.html> (accessed 22 December 2007).
- Wisner B., Blaikie P., Cannon T. and Davis I. (2004). *At Risk: Natural Hazards, People's Vulnerability and Disaster* (2nd ed.). Routledge, London.