Build Back Better Applications for Stakeholder Management in Post-Disaster Environments

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Abstract

The term "Build Back Better" (BBB) signifies a recovery process where the physical, psycho-social and economic environment of a disaster-affected community is improved during recovery. The ability to achieve BBB during recovery is dependent on stakeholder operations. Existing literature has identified fundamental principles for stakeholder management in post-disaster recovery to achieve BBB: (1) Establishment of a Recovery Authority; (2) Creating Partnerships between stakeholders; (3) Grass-roots Level Involvement; and (4) Quality Assurance and Training. The aim of this study was to examine the relevance and applicability of these principles. The 2009 Victorian Bushfires was chosen as a case study with a range of key stakeholders involved in the Victorian Bushfires recovery effort interviewed over three consecutive years. The findings illustrated that modifications to current stakeholder management principles were required. They include having a clearer definition of the recovery authority's role, overcoming skills shortages by providing incentives, enabling easy exchange of information between stakeholders, holding training sessions to educate stakeholders prior to reconstruction and so forth. The modifications proposed will be useful to achieve BBB.

Key words: Build Back Better, Stakeholders Management, Victorian Bushfires, Post-Disaster Reconstruction

Introduction

The recovery and reconstruction period following a disaster is a complex and high-pressure environment. Recovery and reconstruction requires the participation of many stakeholders from Governmental, non-Governmental and private institutions. The different stakeholders involved often have no previous experience of working together or working in post-disaster environments (Lloyd-Jones, 2006). The quality and outcome of recovery depends on how well the different stakeholders work together (Clinton, 2006).

The increasing frequency of disasters and the greater need for improved post-disaster reconstruction practices have given rise to the concept of "Build Back Better" (BBB). BBB uses a holistic approach towards reconstruction and recovery implementing initiatives to simultaneously improve the physical, psycho-social and economic aspects of affected communities in an effective and efficient manner (Jim Kennedy, Ashmore, Babister, & Kelman, 2008; Khasalamwa, 2009).

The concept of Build Back Better relevant to stakeholder functions is the focus of this paper. The recovery effort following the 2009 Victorian Bushfires is examined in order to examine the impact of stakeholder efforts to the successes and shortcomings in Bushfire recovery. Experiences from Victoria are used to present a modified set of BBB principles for the management of stakeholders in post-disaster environments.

Build Back Better Principles

The first official document introducing the concept of Build Back Better is "Key Propositions for Building Back Better" by the former United States president Bill Clinton (2006) following the 2004 Indian Ocean Tsunami. The tsunami resulted in wide-spread damage to 14 countries and was the catalyst

for bringing forth Clinton's (2006) BBB concepts (Khasalamwa, 2009). Other guidelines presenting BBB

concepts include "Holistic Recovery Framework" by Monday (2002), "Building Back Better: Way

Forward" by the Disaster Relief Monitoring Unit of the Human Rights Commission of Sri Lanka (2006),

and "Rebuilding for a more Sustainable Future: An Operational Framework" by FEMA (2000).

Analysis of the above guidelines and other related literature (Clinton, 2006; FEMA, 2000; Monday, 2002)

has led to the creation of three key categories representing BBB: (1) Risk Reduction, (2) Community

Recovery, and (3) Implementation. Risk Reduction involves setting up measures to improve the physical

resilience of the built environment. It is achieved through two principles: Principle 1 Improvement of

Structural Designs, where structural design and construction is modified to withstand present and

predicted hazards (Clinton, 2006; Omidvar, Zafari, & Derakhshan, 2010); and Principle 2 Land-Use

Planning, where risk-based zoning is used to control developments (Batteate, 2005; Mora & Keipi, 2006).

Community Recovery looks at two principles: Principle 3 Social Recovery, where the psychological and

social issues of disaster-affected communities are addressed and dealt with (Gordon, 2009); and Principle

4 Economic Recovery, where initiatives to re-establish people's livelihoods and regenerate the economy

are the focus (Lyons, 2009; Ozcevik, Turk, Tas, Yaman, & Beygo, 2009).

The third category Implementation describes the way in which Risk Reduction and Community Recovery

principles should be applied for effective and efficient recovery. Implementation includes two principles:

Principle 5 Stakeholders, which is the focus of this paper, looking at how stakeholders should be managed

to aid the recovery effort (Clinton, 2006; James Lee Witt Associates, 2005); and Principle 6 Legislation

and Regulation which deals with the enforcement of the BBB principles to ensure adoption and facilitate

processes (Clinton, 2006; United Nations, 2005).

Common Issues with Post-Disaster Stakeholder Management

One of the most common issues with post-disaster environments is the difficulty in coordinating between stakeholders to produce a unified outcome (GoSL & UN, 2005). Initially, there is often no organisation in charge of the overall recovery effort (Frerks & Klem, 2005). The lack of guidance leads different stakeholders to participate disjointedly promoting personal agendas which conflict with the interests of the local community (Batteate, 2005). For example non-governmental organisations (NGOs) who operated in Sri Lanka following the Indian Ocean Tsunami constructed homes which were unsuitable for locals and were largely abandoned. The pressure for fast results during recovery also prevents well-intentioned stakeholders from considering community needs (Lyons, 2009).

Ambiguity about the roles of different stakeholders is another issue (GoSL & UN, 2005). The Victorian Bushfires Royal Commission report stated that the roles of personnel involved in the recovery effort were unclear which led to the duplication of some activities (2009 Victorian Bushfires Royal Commission, 2010b). Many stakeholders involved in recovery have no previous experience in post-disaster environments leading to ad-hoc responses (Frerks & Klem, 2005; J Kennedy, 2009).

Often post-disaster interventions are governed by the national Government without sufficient consultation or power given to Local Councils (Clinton, 2006; Frerks & Klem, 2005). Local-level organisations with useful local knowledge lack the capacity to operate to their full extent when impacted by disasters and are therefore excluded from recovery efforts (Lloyd-Jones, 2006). The involvement of too many external stakeholders leads to unsatisfactory outcomes for locals (Lyons, 2009; Ruwanpura, 2009). The lack of proper role allocation, coordination and involvement of local-level stakeholders are common issues found in post-disaster reconstruction environments.

Build Back Better-based Recommendations for Stakeholder Management

Examination of recommendations for stakeholder management from international literature identifies four principal areas which address common stakeholder management issues: (1) Establishment of a Recovery Authority; (2) Creating partnerships; (3) Grass-roots level involvement; and (4) Quality assurance and training.

Establishment of a Recovery Authority

The management of large numbers of stakeholders in major disasters can be achieved through the creation of a separate body to act as a recovery authority (Olshansky, 2005). Examples of recovery authorities include: the Bureau of Rehabilitation and Reconstruction (BRR) in Indonesia following the Indian Ocean Tsunami (Meigh, 2009); Bam's Reconstruction Supreme Supervisory and Policymaking Association (BRSSPA) in Iran following the 2003 Bam Earthquake (Omidvar, et al., 2010); and the Canterbury Earthquake Recovery Authority (CERA) following the 2010/2011 Canterbury earthquakes in New Zealand (CERA, 2013). The recovery agencies contributed to the success of recovery to differing extents. The recovery authority is responsible for creating the overarching recovery and reconstruction plan and identifying stakeholders who will be responsible for its different aspects (GoSL & UN, 2005). The recovery authority should establish clear roles and responsibilities for the different stakeholders (Monday, 2002; Twigg, 2007). Bakir (2004), Clinton (2006) and Grewal (2006) propose that an inventory of stakeholders with skills required for post-disaster recovery should be developed in pre-disaster periods.

Creating Partnerships

Functional partnerships and linkages established between organisations enhance reconstruction projects (Haigh, Amaratunga, Baldry, Pathirage, & Thurairajah, 2009). The Federal Emergency Management Agency in the United States advocates the sharing of information, contacts, resources and technical knowledge between organisations to help recovery activities (FEMA, 2000). Tas (2010) states that

knowledge from past disasters must be retained and transferred to the Government and other relevant organisations who will be involved in future post-disaster efforts.

Grass-roots Level Involvement

Grass-roots level involvement is important to ensure that recovery addresses local needs and suits local conditions (Lloyd-Jones, 2006; Lyons, 2009). Local knowledge is a valuable resource when designing recovery projects (Silva, 2009; United Nations, 2005). Local Government should be included as a key stakeholder in the recovery effort with the responsibility to manage local-level activities (Red Cross, 2010; Twigg, 2007). Impacted local Governmental authorities can be strengthened with staff from other Governmental bodies or private institutions (Jim Kennedy, et al., 2008). Affected local communities should be included through public stakeholder meetings, community consultation groups and owner-driven construction (Bredenoord & van Lindert, 2010; Davidson, Johnson, Lizarralde, Dikmen, & Sliwinski, 2007; Winchester, 2000).

Quality Assurance and Training

The involvement of different stakeholders from different backgrounds can produce variable quality in recovery efforts (Boano, 2009). It is necessary for the Government to implement quality assurance mechanisms (Clinton, 2006). Long-term recovery should be supported through the placement of monitoring mechanisms (Baradan, 2006; Grewal, 2006). Education and training should be provided to stakeholders based on lessons learnt to improve future recovery processes (FEMA, 2000; Lalonde, 2010). Quality assurance and training together with a recovery authority to coordinate and manage stakeholders, and grass-roots level involvement are key contributors to achieve BBB in post-disaster recovery.

Research Design and Data Collection

A case study approach was used to examine the management of stakeholders in post-disaster environments. The 2009 Victorian Bushfires was chosen to observe post-disaster practices and test the extent of application of the BBB stakeholder management concepts. The bushfires being a more recent event provided the ability to see how BBB concepts that emerged following the Indian Ocean Tsunami in 2004 have been developed over time.

Data was collected by visiting Melbourne and bushfire-affected areas such as Marysville in the state of Victoria in three consecutive years (2010, 2011 and 2012). Semi-structured interviews were conducted to obtain qualitative data about the post-bushfire reconstruction and recovery. The interview participants were chosen from a range of key national and local Government and private organisations involved in recovery (table 1). Participants were questioned on the aspects of recovery they were involved in, their relationships with other stakeholders, successes and failures observed and their recommendations for future improvements to the recovery process. The interview data was transcribed and an inductive approach using Grounded Theory and the Constant Comparative Method was used to analyze the data using the computer programme NVivo 9. The results were then triangulated with reports and other documentation produced about the Victorian bushfires to ensure validity and accuracy of the information.

Table 1: Profiles of the Interviewees (Source: Author)

Research Trip	Interviewee Code	Number of interviewees	Description
Research Trip 1 July 2010	P1 – P9	9	Victorian Bushfire Reconstruction and Recovery Authority (VBRRA)
	P10 & P11	2	Building Commission (BC)
	P12	1	Temporary Village
	P13	1	Local Council
	P14 & P15	2	Volume Builders
	P16 & P17	2	Department of Human Services (DHS)
Research Trip 2 July 2011	P18	1	Rebuilding Advisory Service (RAS)
	P19	1	Building Commission (BC)
	P20	1	Department of Human Services (DHS)
	P21	1	Department of Planning and Community Development (DPCD)
	P22 – P23	1	Fire Recovery Unit (FRU)
	P24	1	Marysville Community Recovery Committee (CRC)
	P25	1	Marysville Chamber of Commerce (CoC)
Research Trip 3 October 2012	P26 – P28	3	Volume Builders
	P29 – P30	2	Fire Recovery Unit (FRU)
	P31	1	Building Commission (BC)
	P32	1	Department of Planning and Community Development (DPCD)
	P33 – P34	2	Rebuilding Advisory Service (RAS)
	P35	1	Department of Justice

Key Stakeholders and their Roles in the Victorian Bushfires Recovery

The Victorian Bushfires took place on the 7th of February 2009. The bushfires impacted the state of

Victoria heavily with 173 lives lost, 78 communities affected and 430,000 hectares of land destroyed

(VBBRA, 2009). Several days following the bushfires the Australian Government created the Victorian

Bushfire Reconstruction and Recovery Authority (VBRRA) as a coordinating body to manage the

reconstruction and recovery process (VBBRA, 2009). VBRRA dealt closely with the affected

communities, Local Councils, local businesses, charities and other organisations to carry out the recovery

activities. Various groups established under VBRRA managed the different aspects of recovery such as

temporary housing, donations management, economic recovery, social and psychological recovery and rebuilding (VBRRA, 2010a). The Victorian Bushfires Royal Commission was appointed separately to investigate the cause of the fires, the recovery process, and to provide a list of recommendations for the future (2009 Victorian Bushfires Royal Commission, 2010b).

The Building Commission was a key stakeholder responsible for the production and revision of the Australian Building Code, AS 3959:2009 containing modified provisions for building in bushfire-prone areas (VBBRA, Building Commission, & CFA, 2010). DHS took care of community concerns with its primary duties being the distribution of the Red Cross Victorian Bushfire Appeal Fund (VBAF); arrangement of temporary accommodation; establishment of the case management service and community service hubs to support bushfire victims; and arrangement of psychological aid (2009 Victorian Bushfires Royal Commission, 2010a). DPCD looked into introducing exemptions in the planning process to facilitate reconstruction (DPCD, 2011). The Department of Justice became involved in collaboration with DPCD to create and implement a land buy-back scheme as a risk reduction measure to move communities away from high risk lands (Department of Justice Victoria, 2012). The rebuilding work was mostly done by individual tradesmen from local and surrounding areas with the support of several volume builders who undertook large and small-scale projects (P14 and 15). Recovery included other community-level organisations such as Community Recovery Committees to liaise between the community and other stakeholders, and local Chambers of Commerce for economic regeneration (VBBRA, 2011). Once VBRRA was closed down in June 2011, FRU was established to help transition communities who were dependent on VBRRA back to normal streams of operation and complete any residual recovery-related duties left by VBRRA (RDV, 2012). Local Councils in the bushfire-affected areas did not undertake a major role in the strategic management and governance of the rebuild, but now have the responsibility of maintaining new infrastructure put in place during reconstruction in the future (P13 and P22).

Results and Discussion

The data collected was analysed and arranged under the key areas of BBB recommendations for stakeholder management: Establishment of a Recovery Authority; Creating Partnerships; Grass-roots Level Involvement; and Quality Assurance and Training.

Establishment of a Recovery Authority

VBRRA was the recovery authority set up to manage the bushfire recovery (VBBRA, 2009). P23 clarified the role of VBRRA in the recovery process: "It was set up as a coordinating body which was supposed to be the central point of contact for all the other governmental agencies but not to actually deliver anything". P7 and P10 observed that there were no proper systems put in place by VBRRA to manage and coordinate the stakeholders which resulted in an ad-hoc recovery environment. During the early stages of recovery there had been no proper role allocation which led to the duplication of recovery activities. P10 recounted an incident where a survey of damage statistics requested by the Building Commission was undertaken by the Municipal Association of Victoria to find that it had already been done previously by DHS, wasting time and resources in the process. P14 said as a volume builder that working with all the different stakeholders was a big challenge. P10 said that "most problems could be fixed with better communication and a better coordinated plan". P13 agreed that a coordinated effort was required using experienced people with defined role allocations.

Failure to arrange builders to carry out the reconstruction of homes affected the recovery process (Building Commission, 2011). P3 and P4 said that large-scale builders were assigned to big infrastructure projects, but the organization of builders for residential rebuilding was not sufficiently considered. There was a significant shortage of small-scale builders who were already busy with work in suburban areas in Melbourne and were not interested in participating in the rebuild (P27). P4 suggested that providing

incentives such as cheap accommodation or subsidized material costs would have helped to encourage builders to participate in the rebuild.

Deciding when VBRRA should be shut down was one of the critical issues that needed resolving. From the Government point of view P23 said: "VBRRA has had a role to play which was supposed to be for 2 years in early to medium term recovery. It was never meant to be forever". By mid-2011, VBRRA had been replaced with FRU (Victorian Government, 2012). P24 stated that "I would've liked to see VBRRA go on for probably another 6 months. It would've helped to finish off a lot of the things that were going on". P24 suggested that more realistic time-frames should be calculated by recovery authorities to support communities for a longer period of time: "VBRRA later found out that people didn't actually start making any decisions until 12 months after the fires, so they were already 12 months behind right from the beginning".

Creating Partnerships

Creating partnerships involves different stakeholders collaborating and working together with shared information to improve the efficiency of recovery. A key observation by stakeholders P7, P8, P13 and P32 was that the Government could have paid more attention to existing knowledge about disaster recovery. P13 said that more consultation with Local Councils would have given VBRRA the ability to deliver a better result. P32 also pointed out that there was no medium as yet to feed in lessons learnt from the Victorian bushfires for future applications.

Although VBRRA encouraged collaboration between stakeholders, P8, P10 and P13 said that in practice this did not happen. P14 said that stakeholders had different ideas about recovery and did different things. P19 observed tensions between different agencies and departments which led to contradictions that were confusing for communities and were counter-productive: "For example when it came to risk reduction measures, the Department of Sustainability and Environment (DSE) wanted to keep trees

whereas the Country Fire Authority (CFA) wanted to minimize the number of trees". P33 felt that collaboration was important for successful recovery programmes and recommends key players with necessary skills, previous knowledge and experience to be incorporated into recovery operations.

A lack of information-sharing was also seen in the recovery effort. P32 said that access to data about bushfire victims for the DPCD to provide help was hindered by privacy barriers. P33 agreed that "because of privacy issues agencies don't share information between themselves. There should be a proper recording system, and this information should be available to all".

Grass-roots Level Involvement

The inclusion, participation and consultation at the grass-roots level with local communities and Local Councils are required. VBRRA held the community at the core of their recovery model (VBBRA, 2009) and organised meetings to include the community in open discussions (VBRRA, 2010a). Bushfire-affected residents P12 and P25 were happy about being consulted. The CRCs set up were also a good medium for the community to communicate with VBRRA, said P24. Despite the community being consulted final decisions were made by the Government and were sometimes not in-line with community preferences: "There was community resentment about some of VBRRA's decisions. For instance, locals did not like the identical Rebuilding Advisory Centre (RAC) buildings that were built in Marysville and Kinglake" (P10). P34 also said "locals did not like modern architecture of the new community centre, library and police station in Marysville, because it doesn't suit the small village image the town had previously". Local Councils were not given the responsibility of managing local-level recovery projects as they were suffering from a lack of capacity after the fires (P8, P19 and P25). The new infrastructure built without consideration of the small rate base and low Council income levels in these areas created problems (P13 and P24). Local Councils were left with expensive long-term maintenance costs that were unaffordable.

Owner-building was promoted for residential reconstruction in Victoria where home-owners themselves acted as the project managers for the construction of their homes, employing small-scale builders and tradesmen with the aid of support services such as the Rebuilding Advisory Service (VBRRA, 2010b). Owner-building was however not very successful in Victoria. P33 said that "owner-builders have no idea what they're doing. People wanted much bigger houses than what they had previously. But they had no idea of the costs. They got a quarter of the way through and ran out of money". This was verified by P29, P32, P33 and P34 who said that there are many half-built houses and people left stranded as a result of owner-building.

Quality Assurance and Training

The involvement of different stakeholders in a major project such as post-disaster reconstruction and recovery requires a high level of quality control. BBB recommendations suggest that quality assurance is to be implemented through monitoring, inspections and training of stakeholders. Many stakeholders did not have sufficient experience or training in specific post-disaster skills. P4 said "It was new for everyone. The architects themselves weren't sure of the plans they were presenting and had to go back and forth between the Council to ensure building permits were issued. It was a learning experience for the builders too". P26 and P27 said that the changes in the building code led to different builders interpreting the code in different ways: "Sometimes some regulations are open to interpretation" (P26). P33 suggests that stakeholders involved in reconstruction as well as home-owners should receive thorough training on the new legislation changes and requirements for rebuilding to avoid making mistakes. P28 added: "The quickest way would be to get specialized builders updated on the legislation and use that core group of people to rebuild quickly".

P34 pointed out that there was a misconception amongst people about the building inspections carried out which inhibited proper quality control: "A lot of people are under the impression that the building inspector is supervising the build. But all he does is check that it's structurally viable, not anything else".

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He recommends that compulsory building supervision is necessary to build structurally sound, compliant, realistic homes.

Although the FRU was created as a temporary organisation following VBRRA, P34 felt that the FRU should be a permanent institution that monitors recovery in the long-term and also incorporates disaster risk reduction (DRR) practices into on-going development work. P32 and P34 fear that once FRU shuts down, disaster alertness and awareness will diminish over time. P34 said "now that this recovery is almost over everyone seemed to have dispersed. If a disaster happens in another 2 years, we can't get them back, because they would be already involved in other jobs. All the knowledge has just disappeared. We need at some level of Government something like a disaster bureau that can handle floods, fires, earthquakes, etc with all the infrastructure and contacts in place".

The lessons from the Victorian Bushfires case study allow for the original BBB principles for stakeholder management to be improved as shown below.

Improvements to the Establishment of a Recovery Authority:

1. Have a clearer definition of the role of the recovery authority. Previous BBB principles suggested that a recovery authority should be set up to coordinate between stakeholders and manage recovery, but the description of its exact role was vague. It is recommended that the recovery authority acts as a *project manager* and produces a recovery programme establishing the recovery activities that are required, the sequence, time-frames, and resource allocations (personnel, material and equipment) and monitor progress by coordinating with all stakeholders.

2. Produce recovery plans that *focus less on speed*. The need to consider the effects of traumatisation following a disaster and long-term sustainability of recovery programmes was not addressed previously. Trauma slowed down the decision-making capability of people affected by the Victorian

Bushfires. Allowances have to be made to allow sufficient time for the community to make decisions regarding recovery although it affects recovery speed.

3. *Identify and overcome skills shortages by providing incentives.* The possible effects of skills shortages were not raised in the original principles. The stakeholders consulted in Australia suggested incentives such as cheap accommodation, material and equipment, or subsidized training programmes to increase the workforce.

4. Pay specific attention to the end of the created body. The principles did not discuss the termination of the recovery authority. *Flexibility* is required on the end date. The recovery authority should not close down if it is still required to manage ongoing recovery activities.

Improvements to Creating Partnerships

1. *Enforce* collaboration and partnerships between stakeholders as appropriate. Although collaboration and partnerships are recommended in the BBB principles, the development of partnerships in practice does not occur naturally. Partnerships have to be created and enforced through the use of legislation or included as a requirement in recovery plans.

2. Hold *regular multi-stakeholder meetings*. The original principles did not address multi-stakeholder meetings, but the stakeholders in Australia found multi-stakeholder meetings important to encourage stakeholder relationships and share information and expertise.

3. *Relax privacy and confidentiality rules* and provide *easier access to information.* The BBB principles stated the need to share information between stakeholders, but did not discuss how this could be achieved. It is recommended to have an open database accessible to stakeholders involved in recovery to easily exchange information, knowledge, contacts and findings.

Improvements to Grass-roots Level Involvement

1. Demonstrate *full transparency.* The original principles advocated community consultation and receiving local-level input into decision-making. Community consultation was central to the Victorian Bushfires recovery effort, but the final decisions were made by the Government due to Government-level conditions and constraints. It is necessary for the community to be provided

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transparent information about all relevant constraints such as timelines, budget, and funding for their input to be viable.

2. *Include key members of Local Councils* in planning recovery programmes. Strengthening and including Local Councils as a key stakeholder in recovery is recommended in the BBB principles for stakeholder management. In reality Local Councils are not able to undertake a high level of responsibility in the immediate post-disaster stage. The inclusion of a few key members on the Council's behalf is suggested to enable the input of local knowledge into recovery programmes.

3. *Include community groups* in project meetings throughout the recovery process. The principles proposed consultation of the community when designing recovery projects. Community satisfaction of recovery projects could be improved by involving the community in designing and implementing recovery projects.

4. *Support owner-building.* The BBB principles support owner-building as a good way to include the community, but the Australian experience showed that owner-building can be detrimental to recovery. Owner-building should only be implemented if proper training and ongoing guidance and support can be provided.

Improvements to Quality Assurance and Training

1. *Utilize qualified reputed stakeholders* for recovery activities. Quality assurance mechanisms such as monitoring and supervision are suggested in the previous BBB principles as a method of quality control. Shortage of staff and high workload can prevent the effectiveness of such methods in a chaotic post-disaster environment. The use of qualified reliable stakeholders can replace the need for a high level of monitoring and supervision.

2. Hold *training sessions* before recovery and reconstruction activities begin to update stakeholders on new rules and regulations. The principles did not propose conducting training at the start of recovery. The experiences in Victoria led stakeholders interviewed to suggest that it would be useful to receive training at the start to be up-to-date before work is commenced.

3. Establish *building advisory services* to support home-owners with rebuilding. Building advisory services were put in place in Australia and were found to be a success. It is suggested that building advisory services are made an important part of all recovery efforts to support the community with rebuilding.

4. *Form an expert group* using key stakeholders who were involved in recovery to *train personnel for future events*. Using lessons from recovery efforts to educate and train stakeholders for the future was a key recommendation in the original BBB principles. Forming an expert group to train stakeholders was a suggestion by stakeholders from the Victorian Bushfires recovery as a way to retain and impart valuable knowledge.

Conclusions

The management of stakeholders in post-disaster environments is a difficult task which can provide substantial benefits to recovery if achieved successfully. Principles for improving stakeholder management in order to build back better have been proposed in literature. However these principles were sometimes ambiguous and held limitations during practice. This paper used data collected from the Victorian Bushfires as a case study to propose improvements and modifications to existing BBB principles for stakeholder management.

This research is limited to the experiences of the Victorian bushfires case study. The proposed modifications to the stakeholder management principles must be tested further using a wider range of case studies from different countries and environments to determine their validity and reliability. It is proposed that future research is conducted to achieve this purpose.

Acknowledgements

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