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Editorial

Disaster recovery project management: A critical service

A decade has elapsed since the Indian Ocean tsunami in December 2004. This period has seen an increased number of major disaster events in areas of high risk. With the tremendous havoc that these events wreak, determining better techniques for recovery is something that many of us feel duty bound to pursue. Knowing how to rapidly reconstruct the damaged built environment is a matter of core interest to policy makers and project management practitioners who are involved in disaster recovery projects. It is at the project level that value is created and the quality of the rebuilt environment is determined, whether in the public or private sector. It is here that relatively small changes in decision-making, the heart of management, can mean the difference between mediocre and fully effective outcomes. It is the aim of this special issue to dig a little deeper and go beyond some of the usual project management practices to understand the core knowledge, tools and methods needed for managing projects in a post-disaster recovery environment.

Disaster recovery is not emergency, life-saving response to disasters, but it is much more than preliminary planning and mitigation activities. Approaches to managing post-disaster reconstruction projects have varied widely, depending on the scale of damage, sources of funding, local capacities and structures of governance (Chang et al., 2010; Comerio, 1998; Daly and Feener, 2016). In presenting cutting-edge work from the field, this special issue explores often complex, challenging, but also rewarding knowledge and practices from disaster recovery projects. These critical investigations raise questions about the role of a growing number of stakeholders, especially local communities and government agencies, who seem to always play a prominent part in deciding what needs to be done and how project-oriented rebuilding should be undertaken.

This special issue is a timely discussion of how experiences and lessons learned from previous and ongoing reconstruction projects can contribute to rethinking project management methodology, practice and associated training to meet a set of unique post-disaster demands. Each of the papers in this issue is unique in its emphasis, but there are a number of consistent themes and areas which overlap:

- The paper by Steinfort sets the tone for this special issue by positioning project management within the community and post-disaster settings and highlighting a number of strategic requirements to fulfil emerging challenges over the course of managing a disaster recovery programme/project.
- The paper by Vahanvati and Mulligan presents longitudinal case studies on good reconstruction project practice and a cross-case comparison allows the identification of critical success factors for achieving long-term effectiveness in post-disaster housing reconstruction projects.
- Both the paper by Gacasan and Wiggins and that by Trivedi and Singh examine the critical skills (sense making and decision making, respectively) necessary to comprehend the complexities associated with disaster recovery projects and offer ideas for training and capacity-building of project managers operating in such contexts.
- The papers by Kalkman and Waard; by MacAskill and Guthrie; by Levie et al.; by Walker et al.; and by Mojtahedi and Oo investigate a number of theoretical and practical aspects of organisational arrangements with a view to achieving better performance in disaster recovery projects.
- Sadiqi et al.'s and Lin et al.'s papers shed light on the role of communities in participating in and/or leading disaster recovery projects and offer pragmatic solutions for community capacity-development activities. This perspective highlights how effective participation can enable affected communities to positively influence project success.

1. Project management methodology in context

The "Project Management Methodology for Post Disaster Reconstruction" developed by the Project Management Institute (PMI) has provided definitions of 'reconstruction project management' and associated practice guidelines for those in the disaster recovery field including relief agencies, non-government organisations (NGOs) and/or governments. It is based on 'A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Third Edition', and is meant to enhance the collaboration and consistency, as well as the quality and accountability, of projects undertaken in a crisis/disaster rebuild environment (Project Management Institute, 2005). However issues arising from using the standard PMI tools in disaster, resilience and climate change programmes, as Steinfort has highlighted, raise a host of questions in regard to the very contexts to which they apply, the integration of

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new knowledge and skills and, most importantly, how they can be used to include key stakeholder values to enable sustainable project results. Steinfort elaborated on this last point by suggesting that:

> It is essential to define programme to project value with the key stakeholders before commitment so that one can monitor and evaluate through programme agreement to project. What all of the above leads to is the need to develop a programme to project management methodology, education and training which is sustainable amongst communities of practice in essentially high risk, high need situations where it can be first understood, and then applied widely and effectively.

Traditionally, the evaluation of project performance has consisted of either physical monitoring and progress measurement or client/end-user satisfaction reports. But these two positions have not been well aligned in disaster recovery projects as they cut across the disciplines of project management and social science. For this reason, the project management methodology has been criticised for the following limitations in post-disaster recovery:

- It focuses on a single project life cycle and has inflexible timeframes for project completion (Steinfort and Walker, 2007);
- It fails to identify the complexities and unique challenges of large disaster settings (Chang-Richards and Wilkinson, 2016; Hayes and Hammons, 2000); and
- It measures project success in terms of project outcome rather than on-going processes (von Meding et al., 2016).

The paper in this issue by Vahanvati and Mulligan explores the long-term effectiveness of post-disaster reconstruction work in relation to resilience of affected communities 15 years after the earthquake in Gujarat and seven years after the flooding events in Bihar, India. A comparison of four case studies suggested four critical factors for ensuring that post-disaster recovery projects have long-term benefits for the disaster resilience of communities. The research demonstrated that the long-term gains of post-disaster recovery projects are greatly enhanced when

> it is built on a strong foundation of community trust and technical support, sustained through an agile approach for on-going project development. However, the most significant finding of the research is flexibility of timeframe – allocation of more time in planning phase and thinking well beyond the completion of reconstruction phase and this is where the traditional PM (project management) approach to PDR (post-disaster reconstruction) management has been lagging behind.

An emerging issue, therefore, is whether traditional project management methodology and tools can be used to negotiate the different expectations and interests of a larger and broader group of stakeholders, from the non-government organisations (NGOs), through government and social agencies, to communities themselves. This is not simply a task of forging a 'common goal' for reconstruction projects, but a means of understanding and thereby being able to navigate how these projects can assist community livelihoods and resilience development from the community's points of view. A progressive spiral project life-cycle approach proposed by Vahanvati and Mulligan might be the answer. There is a need for an 'agile' or incremental strategy to address changes caused by the volatility of post-disaster environments, and a significant time investment for gaining and maintaining the trust of affected communities. In considering the long-term effects of housing projects that go beyond the duration of reconstruction, there is a need to introduce a variety of building technologies and to upskill local residents so that the reconstruction can be used as a 'window of opportunity' to create a resilient housing culture and to build a community's capacity for safe construction and managing their own projects.

2. Sense-making and decision-making

The complexity associated with information processing challenges disaster project managers with there being either too little or too much information, and this can create difficulties in project coordination and communication (Preece et al., 2013). In a fast-changing environment post-disaster, project practitioners often find it difficult to comprehend dynamic situations over time. Disaster recovery operations, however, require practitioners to have the capacity to recognise risks, opportunities, critical timing and emerging issues so that resources can be allocated properly (Crawford et al., 2013; Rapp, 2011). The paper by Gacasan and Wiggins makes the further important suggestion that effective and efficient sense-making is critical in disaster recovery projects. There is little emphasis on sense-making in contemporary models of training and assessment in disaster management. This is possibly due to the perception that sense-making is a non-technical skill that is ubiquitous and difficult to clarify.

By comparing the project performance of experienced and inexperienced project managers during simulated disaster recovery scenarios, Gacasan and Wiggins presents the first study to show evidence of cue utilisation in the context of disaster recovery project management. The authors argue that sense-making is a critical skill that involves organising and prioritising information to achieve an accurate representation of project conditions. It was evident from the comparative results that the naïve cohort demonstrated reduced performance in aspects of cue utilisation (e.g. cue identification, cue precision and cue prioritisation) in comparison to the experienced group. The results from this study provide the basis for an assessment tool that could be used to assess the capability of project managers prior to deployment, and/or to evaluate the outcomes of project management training initiatives.

Population displacement has been a major recurring issue following major disasters (IDMC, 2013). For example, in Japan, following the devastating earthquake and tsunami on March 11, 2011, there was a net emigration of 31,109 people in 2011 from Fukushima (equivalent to 1.5% of the total Fukushima population). This number also accounted for around

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