Enhancing Community Resilience: Practical Resources in Addressing the Collaboration Gap[i]

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Introduction

This paper examines Community Resilience (CR), with particular reference to the "collaboration gap" and the manner in which it impedes the unification of communities and responding professionals in terms of reacting to the effects of an adverse event (disaster relief). The purpose of this paper is to highlight the impact of the "collaboration gap" and to then present resources which may enable communities and responding professionals to react together in order to mitigate and recover from the effects of an adverse event, thereby enhancing the resilience of communities.

CR has been defined by different authors depending on the particular resilience domain to which the author is engaging with (see CARRI, 2013 for details). The RAND Corporation's definition of CR, which is "*a measure of the sustained ability of a community to utilise available resources to respond to, withstand, and recover from adverse situations*"[ii] is comparable to the definition advanced by the United Kingdom's (UK) Cabinet's Office in its UK Civil Protection Lexicon which was published in 2013. Therein, CR is defined as *"Communities and individuals harnessing local resources and expertise to help themselves in an emergency, in a way that complements the response of the emergency services"*[iii]. These definitions emphasise the proactive roles that communities may play in the post-disaster response and recovery environment.

A collaboration gap appears when critical parties in a cooperative effort are not collaborating in the most effective way. In the worst case, there is no collaboration at all, or parties are left out of the main recovery effort (Neef, van Dongen, & Rijken, 2013). The reasons for the emergence of a collaboration gap are nuanced and multifaceted, of course. However, common causes include a lack of communications between relief organisations and local communities, a lack of information sharing between organisations, incompatible work practices, and misalignment between needs and recovery

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[ii] RAND Corporation, 2016

[iii] United Kingdom Cabinet Office, 2013

actions. Counteracting the issues which give rise to collaboration gaps and the ultimate achievement of effective CR by communities and responding professionals is an acknowledged issue (NRC, 2011).

Objective

Collaborative CR, when applied, has the capacity to greatly influence the manner in which a response is marshalled to an adverse event. Work undertaken by Boin and McConnell (2007) illustrates the point that contingency planning for disaster or adverse events is best carried out when communities are involved and play an active role in the manner in which a response is coordinated. In the same work, Boin and McConnell also outline the key barriers which exist to the enhancement of CR. Efforts to overcome these barriers may be captured by metrics/indicators, some of which are posited in tables 1-6 below. These barriers are:

- *Individual defence mechanisms [the "it won't happen here" sense]. People's responses to potential future threats typically encompass a range of dysfunctions (e.g. denial, downgrading threat importance, impotence).*
- *Organisational beliefs and rationalisations. Most organisations (public agencies, political decision-making authorities, NGOs and private companies) are imbued with cultural values that predominate over matters of resilience.*
- *Institutional designs for crisis management. Most organisations are not designed to cope with critical breakdowns.*
- *Costs of preparation. Robust contingency planning for breakdowns is not a 'mission impossible' but it is certainly very difficult (McConnell and Drennan, 2006). Promoting resilient systems requires:*
    - *(i) investing time and resources in plans that may never need to be activated*
    - *(ii) cooperating in a 'joined-up' way with multiple stakeholders, who have their own mandates, priorities, legal status, decision-making cycles, communications systems, information capacities and cultures; and*
    - *(iii) simulations, exercises and training. All this takes time and money, with no visible outputs (an 'avoided crisis' does not show up in the books).*
- *Governance frameworks. During times of crisis and breakdown, leaders would be expected to lead. Preparations are not complete without a plan that guarantees the working of a command and control model.*
- *Socio-economic frameworks. It is hard to expect communities to be resilient when many of them are already in disarray. The modern mega-city houses the most vulnerable people: poor, homeless, criminals, mentally ill, addicts, the sick, immigrants - in short the people who have the least resilience.*

Boin and McConnell, (2007, p. 56)

Instruments for Resilience Management

Two resources/instruments for the development of community resilience are briefly outlined below. The first example relates to efforts to address and counteract the conditions which contribute to the formation of collaboration gaps at an interdepartmental and administrative level within government

and the public service. The second instrument relates to the bridging of gaps among communities and responding professionals in a live post-disaster environment.

1. *Strategic National Framework on Community Resilience*, developed by the United Kingdom Cabinet Office in 2011; and,
2. *COmmunity-BAsed COmprehensive Recovery*, a European Commission funded 7th Framework Project (Grant no. 313308).

The Strategic National Framework on Community Resilience "*explores the role and resilience of individuals and communities before, during and after an emergency. Local emergency responders will always have to prioritise those in greatest need during an emergency, focusing their efforts where life is in danger. The framework is intended to engage interest and facilitate discussion between central government departments and agencies, devolved administrations, emergency services, local authorities, relevant voluntary sector bodies, private sector bodies, elected members and community and faith groups*" (United Kingdom Cabinet Office, 2011). It is a top-down initiative and, while laudable in terms of its ambition, the manner in which it can actively bridge the collaboration gap at the community level in post-disaster environments is somewhat constrained. Notwithstanding the above, in tandem with developed community level instruments, this type of initiative assists in building momentum behind the development of community resilience response into government policy.

Metrics

In terms of criteria for the measurement of community resilience, the work of Cutter et al. (2013) essentially characterises the manner in which community resilience and effectiveness may be determined. Tables 1-6 below outlines this set of indicators for community resilience, underpinning theoretical framework for CR. For full reference and further details on the tables below, see Cutter, S., Emrich, T. & Burton, C.: "Baseline Indicators for Disaster Resilient Communities" and Hazards and Vulnerability Research Institute in the Annotated Bibliography.

Variable	**Source**	**Effect on Resilience**
Political fragmentation (# local governments and special districts)	Norris et al. 2008	negative
Previous disaster experience (PDD, yes or no)	Cutter et al. 2008	positive
Social connectivity (VOADs yes or no)	Morrow 2008; Norris et al. 2005	positive
Dependency ratio (debt/revenue)	Cutter et al. 2003	negative
International migration (%)	Morrow 2008	negative

Sense of place (% born in state and still live here)	Vale & Campanella 2005	positive
Social capital (churches/capita)	Morrow 2008; Tierney 2009	positive
Social capital (% registered voters voting in 2004 election)	Cutter et al. 2003	positive
Internal migration (% outmigration)	Vale and Campanella 2005	negative

Table 1: Community Resilience Indicators: Community Competence

Variable	**Source**	**Effect on Resilience**
Mobile homes (%)	Cutter et al. 2003	negative
Shelter capacity (% rental vacancy)	Tierney 2009	positive
Medical capacity (hospital beds/10,000)	Auf der Heide and Scanlon 2007	positive
Building permits for new construction (#)	NRC 2006	negative
Evacuation potential (arterial miles/mi2)	NRC 2006	positive
Evacuation potential (# highway bridges)	General knowledge	negative
Housing age (% built 1970-1994)	Mileti 1999	negative

Table 2: Community Resilience Indicators: Infrastructure

Variable	**Source**	**Effect on Resilience**
Recent hazard mitigation plan (yes/no)	Burby et al. 2000; Godshalk 2007	positive
NFIP policies (per occupied housing unit)	Tierney et al . 2001	positive
Storm Ready participation (yes/no)	Multi-hazard Mitigation Council 2005; Tierney et al. 2001	positive
Municipal expenditures (fire, police, emergency services as a %)	Sylves 2007	positive

Table 3: Community Resilience Indicators: Institutional

Variable	Source	Effect on Resilience
Housing capital (difference % white homeowner and % black homeowner)	Norris et al. 2008	negative
Homeowners (%)	Norris et al. 2008; Cutter et al. 2008	positive
Employment (%)	Mileti 1999	positive
Median household income	Norris et al. 2008; Cutter et al. 2008	positive
Poverty (%)	Norris et al. 2008; Morrow 2008; Enarson 2007	negative
Single sector employment (% primary sector + tourism)	Berke & Campanella 2006	negative
Female labor force participation (%)	NRC 2006	positive
Business size (% large >100 employees)	Norris et al. 2008	positive

Table 4: Community Resilience Indicators: Economic

Variable	Source	Effect on Resilience
Racial/ethnic inequality (Abs. value of difference in % black & % white)	Norris et al. 2008; Cutter et al 2008	negative
Educational inequality (Abs. value of difference less than 9th grade & college)	Norris et al. 2008; Morrow 2008	negative
Physicians/10,000 (health access)	Norris et al. 2008	positive
Elderly (%)	Morrow 2008	negative
Social vulnerability index (SoVI)	Morrow 2008; Cutter et al. 2008; Tierney 2009	negative
Transport challenged (% no vehicle)	Tierney 2009	negative
Communication challenged (% no phone)	Colten et al. 2008	negative
Language competency (% ESL)	Morrow 2008	negative

Crime rate (per 10,000)	Colten et al. 2008	negative
Special needs (% pop with disabilities)	Heinz Center 2002	negative
Health coverage (% pop with coverage)	Heinz Center 2002	positive
Population wellness (% black infant mortality rate)	Norris et al. 2002, 2008	negative

Table 5: Community Resilience Indicators: Social

Variable	**Source**	**Effect on Resilience**
% Land area in 100-year flood plain	Cutter et al. 2008	negative
% Land area subject to SLR	Cutter et al. 2008	negative
% Soil erosion	Cutter et al. 2008	negative
% Green space/undisturbed land	Cutter et al. 2008	positive
% Urban (access variable)	Cutter et al. 2008	positive
% Forested land cover (wildfire potential)	Cutter et al. 2008	negative
% Land with hydric soils (liquefaction)	Cutter et al. 2008	negative
% Wetland loss (ecosystem services)	Gunderson 2009	negative

Table 6: Community Resilience Indicators: Ecological

Annotated Bibliography

Boin, A., & McConnell, A. (2007). "Preparing for Critical Infrastructure Breakdowns: The Limits of Crisis Management and the Need for Resilience". *Journal of Contingencies and Crisis Management*, 15(1). This reference discusses how communities can be uniquely placed to facilitate recovery in post disaster environments.

European Commission (2013-2016). *"COmmunity-BAsed COmprehensive Recovery (COBACORE)".* The *COBACORE* project delivered a resource which connects those in need in the wake of a disaster (or those in need during the longer horizon recovery phase) with people in their community who can help, as well as improving the situational analysis for professionals, enabling them to deploy resources more effectively. It matches the needs of the community affected by a disaster with the capacities of the responding community (volunteers) and

responding professionals. In terms of application, the COBACORE platform describes attributes for resilience building:

- the means for civilians, private and public organisations to demonstrate their needs - either directly or through existing channels (e.g. existing communication platforms, social media channels);
- the means for civilians, private and public organisations to express capabilities they can contribute to the recovery operations (e.g. such as structural and engineering needs assessments, observation capabilities, executive capabilities);
- a mechanism for cross-jurisdictional and multi-stakeholder collaboration to help facilitate a more comprehensive knowledge and understanding of the affected area - including economic, social, financial and other elemental consequences of a disaster; and,
- intelligent and innovative support mechanisms that process and analyse data and provide context information for users, and tools to monitor and prioritise developments.

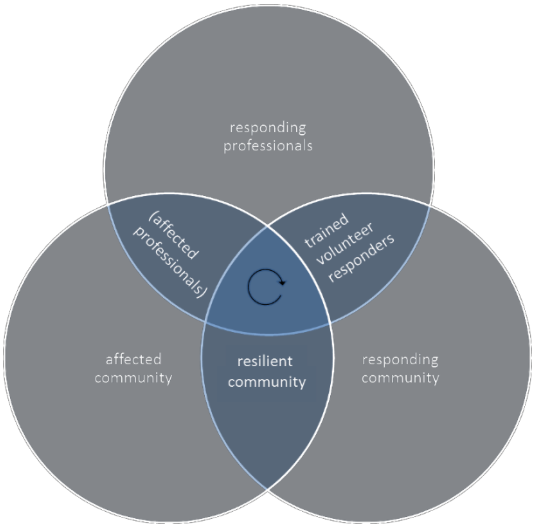

Figure 1 COBACORE's conceptual linkages to stakeholders in post disaster areas

Figure 1 outlines conceptually how the COBACORE tool joins the parties present in a post-disaster environment. The overlap in the Venn diagram between the *affected community* and *responding professionals* is not treated as a separate user group in COBACORE, but represent local professionals affected by the disaster themselves. Important COBACORE users here are the municipal authorities that are often responsible for crisis coordination on a community level.

A video overview of the COBACORE tool is available here.

CARRI (2013). "*Definitions Of Community Resilience: An Analysis*" Available via: http://www.resilientus.org/wp-content/uploads/2013/08/definitions-of-community-resilience.pdf, Date Accessed 22.04.2016.
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NRC (2011) National Research Council of the National Academies. "*Building Community Disaster Resilience Through Private–Public Collaboration*". National Academies Press, Washington DC.
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Highly useful and annotated source of indicators for measuring community resilience.

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