



Learning *for* **sustainability**

in times of accelerating change

**edited by: Arjen E.J. Wals
and Peter Blaze Corcoran**

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ISBN: 978-90-8686-203-0
eISBN: 978-90-8686-757-8
DOI: 10.3920/978-90-8686-757-8

**Cover art: “Handwoven Waddensea Landscape”
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First published, 2012

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Chapter 8

Building resilient communities: where disaster management and facilitating innovation meet

Karen Elisabeth Engel and Paul Gerard Hendrik Engel

Abstract

Contemporary concerns, such as climate change, the multitude of disasters, enduring violent conflicts, and the implosion of the global financial system are characterized by complexity, uncertainty and contradiction, and lead to rapid and often unpredictable change. Despite the global nature of most of such concerns, it is local communities that will have to adjust their practices in order to cope with the often adverse effects of such events. This chapter identifies some of the lessons learned in fields such as disaster management and facilitating innovation, which could be relevant in other areas, particularly for reflexive practitioners working with vulnerable communities to enhance their resilience. Such a cross-boundary approach can provide valuable insights into the key aspects of what dealing with 'post-normal times' entails at the community level. We argue that resilient communities can be engendered by unleashing and strengthening their adaptive potential, through creating awareness of and space for emergent behaviour and, by laying an enabling foundation for competent collective behaviour.

Introduction

The world is complex, uncertain and ever-changing. This may seem obvious, but it is outlandish to most of us. We have long believed that it is humankind who determines the global agenda; that we control the world and our own destinies, and can command nature to conform to our needs and desires (Van Loon 2002, Oliver-Smith 2004). This view is in line with the 'acceptance of the thesis that nature [is] there for the using and the domination of nature [is] a feasible project' (Harvey 1996, p. 121), i.e. the Enlightenment ideas of human emancipation and self-realization as asserted by philosophers such as René Descartes and Francis Bacon. Descartes, in his *Discourse on Method*, claimed that applying human reasoning and finding a practical philosophy would lead us to 'render ourselves the lords and possessors of nature' (Descartes 1668). Such views have engendered ideas and beliefs of 'command and control' that now seem inappropriate for solving complex and interdependent problems.

We nevertheless continue to approach the future with hubris, often denying the need for awareness of our ignorance (Ravetz 2006). Through science, we believe, we can know and control the world as we acquire knowledge that is objective and certain, free from bias and doubt, even when dealing with notions that are largely imaginary, cannot exist in the present and pertain to the future, like risks (Bankoff *et al.* 2008, p. 47).

Although the idea of having control is a pleasant one, contemporary concerns such as climate change, the multitude of disasters, enduring violent conflicts, and the implosion of the global financial system, remind us that the most pressing issues are complex, uncertain, contradictory, relentless and involve rapid and often unpredictable change. To take a central notion of this book, we could say we live in a time that authors such as Funtowicz and Ravetz (1993), Funtowicz *et al.* (1999) and Sardar (2010) have dubbed 'post-normal times' to emphasize that right now business as usual is no longer adequate. We need to deal with pressing issues in the face of uncertain facts and disputed values, high stakes and an urgent need to take decisions (Ravetz 2004).

Despite the global nature of today's concerns, it is local communities that to a large extent will have to adopt new practices and implement urgent measures in order to cope with the effects of phenomena such as climate change. This means that communities will be the primary stakeholders and agents of change. Central to this chapter is therefore the idea that community resilience is a key asset to deal with many pressing concerns and stresses.

This chapter presents some of the lessons that have emerged from a cross-boundary intellectual exercise, particularly to reflexive practitioners working with vulnerable communities to improve their resilience. It aims to show that across disciplines relevant lessons can be shared on key aspects of what dealing with 'post-normal' times entails at the community level. As Moore and Westley (2011) point out, crossing boundaries, including intellectual boundaries, is essential if we are to progress from mere recognition of the problems to effective action.

We examine two fields of study that at first sight may seem very different, but are in fact interrelated, namely disaster management and facilitating innovation. In their parallel quests for informed ways of improving community resilience in practice, the authors have found striking similarities between the approaches employed in these two fields. In particular, in their practical approaches to improve collective performance under stress and uncertainty, they have found that a cross-boundary approach can provide valuable insights.

While disaster management focuses on stress and uncertainty originating from hazards such as earthquakes, hurricanes and floods, facilitating innovation is directed at the stress and uncertainty resulting from stakeholders' desire to stay ahead of possible events, whether opportunities or threats. Both address situations in which human purpose is open-ended and precise results are unpredictable.

Other disciplines and bodies of literature deal with similar issues, and may arrive at similar insights, but the practical nature of the approaches in these two fields and their focus on social interactions allow us to come one step closer to developing a lateral approach across disciplines. Enabling us to inform community practices aimed at finding practical, responsible and appropriate ways to deal with pressing demands, challenges and change.

We argue that central to building resilient communities are sense-making, imagination, agency, letting go and finding out-of-the-ordinary solutions. Resilient communities can be engendered by unleashing and strengthening their adaptive potential.

This chapter is divided into three parts. First, we look at what resilience entails and the challenges it poses at the community level. We then look at disaster management and innovation studies and highlight some of the lessons learned that are relevant to communities living in 'post-normal times'. Finally, we draw some conclusions as to how these two fields of study can – and perhaps should – influence our thinking about ways to foster the resilience of communities.

Resilient communities

By the end of the 20th century the world seemed to have settled into a 'global balance of power, ...[that] maintain[ed] a semblance of peaceable law and order' (Saloranta 2001, p. 2) and provided communities with a sense of coherence, cohesiveness and safety. Central to this situation were well-defined hierarchical governance structures, and a predominant scientific worldview was one of objectivity and order.

Today, the world no longer seems stable. We face a multitude of crises – energy, water, finance, food, pensions, climate change, etc. – leading many commentators to warn of continuing decline and future generations to expect falling standards of living and increasing hardship and uncertainty (Montuori 2011). It is clear, not just to the international Occupy movement, that in these post-normal times, conventional ideas of management and control have outlived their usefulness (Montuori 2011, Saloranta 2001, Sardar 2010).

To address these challenges, several disciplines have embraced the idea of resilience. The advantage of this idea is that it embraces a 'can-do' attitude that emphasizes communities' capabilities and capacities, and acknowledges that exposure to hazards and adversity can engender growth and development (Paton and Johnston 2001).

Arriving at a commonly accepted definition of resilience has long been a challenge. The concept was first used in the physical sciences to refer to the ability of a spring or a material to bend under pressure and then to bounce back to its former state. Then, in the 1970s, Holling introduced the concept in ecology, describing resilience as the property 'that determines the persistence of relationships within a system' (Holling 1973, p. 17). Here the degree of resilience of a system determines whether it will survive or cease to exist. In the 1980s the notion was adopted by the engineering community to refer to the ability of structures to absorb stress and recover from hazardous events (Plodinec 2009, p. 1). Various other disciplines now use the concept to refer to the adaptive capabilities of individuals, communities, institutions, organizations, etc., in the face of perturbations.

This broad range of definitions of resilience can be contrasted and classified in various ways. There are ontological definitions that depict resilience as 'the ability to...' as opposed to more phenomenological definitions that describe resilience as a process. For some, resilience embodies the ability to adapt to cope with perturbations, while for others it indicates the ability to withstand perturbations without collapsing or changing, i.e. resistance.

In this chapter we are interested in *community resilience*. Regarding communities as social systems, it is generally agreed that the whole is more than the sum of its parts, and the same applies to community resilience: 'a collection of resilient individuals does not guarantee a resilient community' (Norris *et al.* 2008, p. 128). It is interesting to note that for Norris *et al.*, resilience refers to adaptability rather than stability: 'the resilience of a system ... depends upon one component of the system being able to change or adapt in response to changes in other components; and thus the system would fail to function if that component remained stable' (Norris *et al.* 2008, p. 128). While in engineering a system or material can adapt to return to its previous state, for communities we would argue that this is in fact impossible. For a social system, just as for an ecosystem, adaptability refers to a system stabilizing in a new state of normalcy as it 'allows for many possible desirable states that match the environment' (Norris *et al.* 2008, p. 130; see also: Gunderson 2000, Plodinec 2009).

As a working definition, we propose to look at community resilience as the ability of a community, in the face of significant changes, whether positive or negative, in

its physical, social, political, economic and/or institutional environment, to adapt and achieve a new 'state' in which it can deal effectively with threats, take advantage of opportunities and flourish. In our view, therefore community resilience refers to collective performance under stress involving all community actors.

Resilience in practice: lessons from disaster management and innovation studies

In this section we present some selected insights based on the authors' experience as practitioners in the fields of disaster management and facilitating innovation, and on a systematic literature search.

Make sense and imagine

Central to all disasters is the disruption of the social order (Rodriguez *et al.* 2007, p. 12) by a particular force or event. Under normal conditions the world makes sense, events take place one after another, and change unfolds in a coherent and orderly fashion, whereas during a disaster the sense of order is replaced by one of chaos. Interestingly, this is what post-normal scientists identify as being the case today in a structural sense: 'people suddenly and deeply feel that the universe is no longer a rational, orderly system' as 'much of what [was] taken as normal, conventional and orthodox just does not work anymore' (Sardar 2010). This is very unsettling.

Even though disasters seem natural, they are 'inherently social phenomena' (Bankoff *et al.* 2008, Rodriguez *et al.* 2007, p. 12) and inevitably complex (Marion 1999). This makes it impossible for us to understand them: if the emergent system is greater than the sum of its parts, then only the whole can grasp the bigger picture and the parts remain ignorant of the whole (Marion 1999, p. 29). Yet despite this ignorance, people still need to make sense of what is happening in order to be able to act. As post-normal scientists recognize, making sense of complex, atypical situations requires engaging with the complexity of the system, i.e. with as many different parts as possible. This means activating complex dialogues, creative collaboration and the collective imagination: 'We will have to imagine our way out of the post-normal times' (Sardar 2010, p. 14). This imagining is essential if we are to escape our bounded reality, go beyond our comfort zones to 'develop new forms of education and imagination' (Montuori 2011), and comprehend as much of the system as possible.

Studies of the social organization of innovation have also pointed at sense making as one of the axes along which actors self-organize in their quest for new ideas and innovative solutions. Engel (1997) identifies 'convergences' as one of the

social formations that emerges from complex social innovation processes. In their unending inquiries for innovative ways of doing things, actors converge around certain ways of making sense of the situation in which they find themselves, and of the relationship between technology and society. Innovation studies also show that an 'innovation' is very often not 'new', in the sense of not known, but in fact involves a different way of combining, i.e. making sense of, already known components, turning the challenge of sense making into a crucial element of networking for innovation.

Act now

A disaster can be defined as a complex situation in which 'stability and order make place for chaos, threat, innovation and uncertainty' (COT 2001, p. 11). Similarly, in complex innovation arenas, problems can occur when multiple stakeholders, often with conflicting ideas and interests, and exhibiting huge differences in terms of access to knowledge and finance, compete for resources to advance their own 'projects'. At the same time, established (conflict-resolution) institutions and customary relationship patterns reflect what has been done in the past rather than what needs to be done in the future. A similar tendency can be observed throughout disaster management. Just as generals tend to fight the last war, disaster professionals, in particular, tend to respond to the last disaster. This is hardly surprising, since their professionalism is based on past experience and on science that is based on facts and knowledge derived in the past. But it inhibits these professionals from dealing with the situation at hand, which is unique and most likely nothing like past situations.

While the degree of urgency felt by the various stakeholders may differ, both disaster management and innovation studies acknowledge that governance in such situations needs to allow both structure and serendipity to guide stakeholder actions and interactions (Engel 1997). They will have to surrender the illusion of having full control, and acknowledge that ignorance of what the future will bring must not stand in the way of action. As disaster managers often say, it is better to act now and ask for forgiveness later. In fact, human attempts to control key processes often reduce the capacity of a system to cope effectively with adversity, allow necessary innovation and move towards a desirable state of normalcy (Gunderson 2000, p. 436).

Let go

Governance practices, particularly in the Western world, are largely based on principles of hierarchy, technocracy and control. Nonetheless, scholars, practitioners and professionals are increasingly recognizing that these practices

can prevent the emergence of enabling institutional environments and of qualities (besides planning and preparation) such as self-organization, networking, creativity and improvisation. As Wachtendorf and Kendra (2006) observed, ‘planning encompasses the normative “what ought to be done”, [while] improvisation encompasses the emergent and actual “what needs to be done”’. Planning and improvisation should thus form part of the same system, to ensure a resilience that involves ‘the mental processes of sense making, improvisation, innovation [and] problem-solving’ (Comfort *et al.* 2009, p. 59; see also Paton and Johnston 2001, p. 273), as well as space for creativity and self-organization.

Generally, however, ‘improvisation occupies a somewhat conflicted space in [for instance] the realm of emergency and crisis management capacities: we plan in detail so that we don’t have to improvise, knowing that we will have to improvise’ (Wachtendorf and Kendra 2006, p. 1). Improvisation is thus often regarded as a lack of planning, subordinate to planning or a lack of control. Yet, as Tierney *et al.* (2001) have argued, every disaster requires improvisation. The difficulty is that planning for disasters means planning for unforeseen, unimaginable or unrecognized events.

Take New Orleans and Hurricane Katrina in 2005. The city acknowledged the risk of hurricanes and had planned for such events, but it did not consider flooding as a result of a hurricane to be a risk they would have to plan for. The city had not experienced flooding since Hurricane Betsy in 1965. Furthermore, the culture around disasters was so developed that people no longer regarded hurricanes as a real risk, but as a reason for social gatherings in hotels, or for hurricane parties, or simply as a nuisance. Then came Katrina and the catastrophe that ensued as all levels of government failed. The bungled response to Katrina has been described as ‘perhaps the biggest administrative failure in American history’ (Kettle 2005, p. 2).

The lessons from innovation studies also underline the tendency of institutions to favour planning for the customary, rather than to expect deviations from known patterns. In studies on the facilitation of social innovation, finding ways to break through customary barriers to change is frequently difficult, as it is the customary way of doing things that often prevents the recognition of opportunities, the emergence of new ideas or the testing of radical solutions (Moore and Westley 2011).

Improvisation is often overshadowed by the misconception that it involves acting in an unprepared fashion. Organizations concerned with either disasters or innovation generally try to avoid improvisation, which has the image of ‘independent, disconnected, and chaotic activity’ (Wachtendorf and Kendra 2006). Yet improvisation concerns the capacity for individuals to come together to

solve complex problems, transform original models and establish innovative but necessary responses (Barrett 1998, Weick 1998). In order to cope with unforeseen emergencies one needs to 'rework ... knowledge to produce a novel action in time to meet the requirements of the given situation' or 'employ creative action in context ... while satisfying time constraints' (Mendonça and Wallace 2004, p. 6). In other words, the better the plan, the better the improvisation.

Find out-of-the-ordinary solutions

Addressing unusual challenges requires out-of-the-ordinary measures. As the 'normal' no longer works, alternative needs arise. While 'normal' circumstances might accommodate largely technocratic and hierarchal practices, in post-normal times such practices are likely to obstruct effective responses.

For example, the formal top-down governance systems we see in various Western countries are often characterized by their inherent distrust in the public when it comes to complex national and/or global issues, while at the same time they place great trust in the formal top-down structures to make the 'right' decisions and to communicate them to the 'irrational public' to ensure action (Dynes 1994, p. 148, Hoppe 2011, p. 28). This distrust of the public generally impedes efforts to bring together the necessary resources and to utilize everything that is present in society to address urgent needs. Both disaster and innovation studies have shown that formal organizations have to engage with communities not only to bring together their capabilities and resources, but also because they are the primary responders and stakeholders. During most disasters formal responses are usually inadequate and too late, and the gaps are filled by informal responses led by volunteers and emergent social groups. Research has shown that the public, generally those most affected, engage in effective emergent and pro-social behaviour while 'helping immensely in coping with the extreme and unusual demands of a disaster situation' (Rodriguez *et al.* 2006, p. 85). Even though public officials and the media often depict social behaviour during emergency situations as being 'animal-like, irrational, anti-social ... people typically "rise to the occasion" during disasters ... [and more often than not] act in very rational and predictable ways' (Trainor and McNeil 2008, p. 1).

In this light, Scanlon (2005) studied the initial responses to the terrorist attacks in London in July 2005 and observed that they were mainly accomplished by 'those who happen to be on hand' (Scanlon 2005, p. 152) such as medical doctors and office staff on their way to work. Rodriguez *et al.* (2006) also described the extensive non-traditional and pro-social behaviour that emerged in the aftermath of Hurricane Katrina that formed by far the primary response to the event.

Similar lessons have been learned in studies of the social organization of innovation. One lesson from effective community-level innovation processes is that all relevant actors must be involved. It led to a growing interest in the role of innovation brokers in organising such complex multi-stakeholder processes (Devaux *et al.* 2010). Another lesson is to take apparently ‘deviant’ solutions seriously or, even better, to actively seek them out. Engel (1997) describes how a farmer in the Andean Highlands when refused a loan for a stable for animal husbandry, took out a loan to build a new house. The new house he then used as a stable for raising animals and continued to live in his old shack. Needless to say, he paid off the loan based on his successful animal husbandry business and local bank officials accepted a somewhat ‘improvised’ interpretation of existing regulations. This example highlights how particular relationship patterns, customs and regulations may stifle innovative capacity if they do not allow for out-of-the-ordinary solutions. Various studies of ways to facilitate complex, inter-institutional innovation processes have therefore gone far in designing ways to challenge the customary and to develop extraordinary ways for actors to relate to each other (Moore and Westley 2011). Knowledge networks, quality circles and policy platforms are a few examples. The innovative power of social media such as Facebook is a good illustration of the same phenomenon.

What both disaster management and innovation studies have to tell us is that the currently predominant command-and-control approaches are inadequate to deal with the challenges of post-normal times. It is like trying to fit a square peg into a round hole. Trying to control the whole or even parts of the system does not work under such circumstances. To find out-of-the-ordinary solutions, communities need to embrace out-of-the-ordinary forms of (self) organization, possibly not involving just the usual suspects.

Building resilient communities: unleashing and strengthening adaptive potential

We have argued that becoming resilient in post-normal times may be informed by the lessons emerging from disaster management and innovation studies. The main lesson may be that, under stressful circumstances, the paradigms of organization become obsolete, but not necessarily ‘liquid’, yet they do need to change. Besides, while it is clear that the precise nature of competent performance under stress cannot be predicted, both fields have produced multiple approaches and instruments that can help a community to prepare and organize in anticipation of out-of-the-ordinary circumstances.

Based on this preliminary, far from exhaustive review, in combination with our professional experience, we would argue that in practice, reflexive communities and practitioners could at least aim to do the following:

Loosening up: creating awareness of and space for emergent behaviour

Create the right conditions. Under stressful circumstances, people who happen to come up with a good idea, in the right place, at the right time, need to feel supported rather than constrained. For the individuals concerned, this means being able to trust that their 'boss' acknowledges their initiative and provides the necessary backing and the space they need to act on it. For organizations, it means ditching the 'elevator mentality', as Moss Kanter (1985) dubbed it, or the excessive reliance on restrictive vertical relationships. Space needs to be provided in which lateral thinking and creative strategies are possible. Creating space for self-organizing capacities requires a 'generous boss' who 'embod[ies] experience, but ... invite[s] doubt, reassembly, and shaping to fit novelties in the present' (Weick 1993, p. 642). Wisdom is required of such boss: '[W]ise people know they don't fully understand what is happening right now, because they have never seen precisely [the] event before' (*ibid.*, p. 641). People can be trusted to rise to the challenge.

In New Orleans, in the wake of Katrina, for example, a group of friends came together and formed the 'Robin Hood Looters' who, after getting their families out of the affected area, remained behind to rescue their neighbours. Ironically, it is difficult for formal organizations to provide backup or even space for such emergent behaviour. Who will be held responsible if a Robin Hood Looter unwillingly harms someone due to their lack of experience? Does it mean the government is not up to the challenge? Taking the initiative remains a balancing act: too much confidence or too much caution both may prevent a system from acting competently as it may disregard uncertainty and complexity, or on the contrary, become immobilized for fear of uncertainties.

Adapt accountability. An important lesson from disaster and innovation studies is that attitudes are embedded in and reinforced by institutional cultures and systems of accountability. Fear of being responsible for out-of-the-ordinary decisions with uncertain consequences may stifle even the most competent individuals, unless they are certain that an ex-post evaluation will look at impact, take into account conditions on the ground and acknowledge that it is impossible to say whether other actions/ decisions would have produced better results. Unfortunately, most evaluations are based on pre-established targets and indicators that work only when continuity prevails, and not when discontinuity and/or uncertainty kick in. Changing this situation will require changing accountability systems and formally recognizing emergent behaviour.

Create awareness and space for actors to rewire relationships and reconnect available capacities in novel ways. Even though we are naturally inclined to follow patterns, stressful situations require people to find out-of-the-ordinary solutions by cutting through and across existing patterns in order to gather the right people, capacities and resources in the right place, at the right time, doing the right things. As innovation studies have shown, an adaptive social system is one that provides its members with a certain ‘redundancy’ of alternatives to customary behaviour. For example, it might install and plan for the use of various alternative communication systems, besides the highly specialized means of communication – such as the Dutch digital device C2000 – that both link up professional responders, and enable the public, to the extent possible, to use less restricted channels such as local radio or mobile phones so that communication is not limited to the emergency services, but extends to the local supermarket or restaurant owner.

Create awareness and space for re-linking available resources. In the current top-down way of thinking re-linking resources is generally understood as confiscating resources in times of need. Confiscation entails, however, a relationship based on hierarchy and mistrust. It does not encourage the constructive engagement of the owners of those resources. An alternative is to use ‘normalcy’, when stress and high stakes are not the defining features of the situation, to negotiate an understanding of what to do when disaster occurs. Enabling such a negotiated understanding is the key to building trust, to understanding each other’s interests and to formulating practical agreements regarding resources and necessary experts in case of need. Such practical agreements may entail, making sure that buses available to evacuate people also have drivers who are willing to risk their lives for the common good, or that supermarket owners who share their supplies with the public would know they will be recognized and rewarded for their support to the community under stress.

Laying an enabling foundation: ensuring competent collective behaviour

Loosening up existing structures does not mean getting rid of structure and discipline altogether and letting everyone do whatever they want at any time. In fact, creating enabling structures requires discipline and learning. Competent emergent behaviour is in fact improvisation based on a solid foundation. As any jazz player will tell you, competent emergent behaviour requires a solid knowledge base, discipline and lots of exercise.

Promote awareness, practice and learning. To be able to improvise, it is important to know and understand the dominant patterns that govern daily life. Within a community one needs to know what capacities and resources exist and what is needed to mobilize them. This requires mostly networking meeting, knowing and engaging with allies, both likely and unlikely. Once the common patterns are

known and internalized, they become ‘tacit and amenable to complex variation and transformation’ (Barrett 1998, p. 606). Just like playing jazz, providing the necessary base for resilience requires continuous practice and learning.

Planning for improvisation. Improvisation and planning are elements of the same process. Without proper planning, there will be no proper improvisation and without improvisation, no plan is good enough. Planning is capacity building; planning processes allow people to come together, learn and develop their capacities, thus ensuring greater adaptive strength. In fact, a concrete plan is often of secondary importance to the individual and collective capacities acquired during the planning process. That is why planning for the extraordinary needs to be done with all relevant stakeholders involved, and not just by planning officers.

Build trust between partners and the public before it is needed. As mentioned above, if people meet and become engaged throughout the preparation process, this can build trust and make collective performance possible when it is needed. If the terms for cooperation have to still be negotiated and agreed upon in times of stress, it is often too late. It is at such times that the results of preparatory work and discipline become apparent.

Negotiate a broad understanding with all relevant players about redeploying critical resources before they are needed. Studies of innovation, and of disaster management in particular, underline the importance of preparing for the deployment of critical resources when the time for action arrives. Examples of failure abound. There may be formal agreements with public transportation companies to make buses available, but if buses are available but drivers are not because they have decided to wait out the storm at home with their families, you have a problem. This is what happened during Katrina. There was no negotiated understanding with the experts that were needed to operate these resources. A negotiated understanding provides a level of trust necessary to be able to cooperate and improvise in stressful, high-risk circumstances. It is negotiated because, as in the case of New Orleans, the bus drivers had their own priorities, like ensuring their families were safe, before they would even consider risking their lives for the public good.

After scratching the surface, what lies ahead?

This chapter has provided just a few illustrations of how insights from disaster management and innovation studies may be used to inform endeavours aimed at developing and strengthening community resilience. Within the framework of this chapter, we are aware that it is not possible to do justice to what colleagues in these fields and also in other fields have already achieved. But we do hope to have illustrated that crossing disciplinary boundaries may be fruitful and can

boost both thinking and practice on how to assist communities to become more resilient to the challenges of our time. Further exploration will be necessary to sharpen our understanding and to reassess some of the assumptions that underlie our arguments, as well as to develop new approaches, instruments and tools that help in implementing the design principles referred to above. These may include methods that help to create awareness of and break down mental and organizational barriers to improvisation and creativity, and others that assist in charting out relationships and available capacities and resources, or assist stakeholders in understanding and improving their networking with a clear purpose in mind. All of these methods may be helpful in the development of the instruments necessary to build resilient communities: communities that in the face of adversity are able to rewire organizations, re-network capabilities and re-link resources in innovative ways and to re-establish their integrity to achieve a new desirable state of normalcy.

We hope in this chapter we have been able to highlight relevant insights that, if their relevance is confirmed, could make available an enormous reservoir of specialized knowledge and expertise in various disciplines that can be used, particularly by reflexive practitioners, to address one of the most pressing problems of our times: how to increase the resilience of communities?

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