

Ten Ways to Fail: Disaster Risk Management in the Wicked Problems Framework



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30 June 2017: T04PO1 – Session 2

3rd International Conference on Public Policy

What is a Wicked Problem?

Ten distinguishing properties of wicked problems (Rittel & Webber, 1973):

1. There is no definitive formulation of a wicked problem
2. Wicked problems have no stopping rule
3. Solutions to wicked problems are not true-or-false, but good-or-bad
4. There is no immediate and no ultimate test of a solution to a wicked problem
5. Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly
6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan
7. Every wicked problem is essentially unique
8. Every wicked problem can be considered to be a symptom of another problem
9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution
10. The planner has no right to be wrong

Additional Characteristics of the Wicked Problem

- High levels of complexity, uncertainty, and divergence paired with intractable conflicts (Head 2008)
- Traditional methods to solve the problems begin to fall short over time (similar to Kuhn's notion of the need for scientific revolutions)
- Political challenges (e.g. policy windows) and economic concerns (e.g. scarce resource allocations) hinder cooperative initiatives

What is a Disaster?

- A phenomenon that has threatening characteristics is classified as a hazard
- A hazard event that impacts humans is a disaster
 - A tsunami that strikes an uninhabited island in the middle of the ocean is not a disaster
- Therefore disasters are social phenomena and within the purview of social sciences
- The engineering and technology driven approach to disaster risk management (DRM) is nearing its limits as populations expand and urbanize

A simple logic of the analysis

- Planning suffers from wicked problems
- Governance and DRM are concerns of planning;
- Therefore, governance and DRM suffer from wicked problems;
- Furthermore, good ideas from planning and governance vis-à-vis wicked problems can be applied to DRM

“The *one-best answer* is possible with tame problems, but not with wicked ones,” (Rittel & Webber, 1973: 169)

- Remember the failure of Scientific Management?

PA + Planning + DRM

- Since the 1970s, public administration and planning have shared institutional umbrellas and been lumped together as concerns of governance
- Disaster management has also found shelter under the same theoretical protections in recent years
- Current trends to improve resilience (“build back better”) and smarter development with respect to climate change have reinforced the shared interests of PA, planning and DRM

Wickedness in DRM

- There are three elements to a disaster: the hazard, the risk of damages, and the resilience of the population
 1. The hazard is unpredictable in its intensity, frequency, and scope
 2. The risk of damages is dependent on fluctuations in human activity and development
 3. The resilience is dependent on human behavior
- Very little about disasters can be controlled; there are myriad variables and many errors
 - *known knowns, known unknowns, and unknown unknowns*

Why the Wicked Problems Framework is Useful for DRM

- The general consensus on DRM is that the field needs to move from a paradigm of prediction to one of anticipation
 - Prediction implies some notion of the ability to prevent or avoid disasters, despite inevitable hazards
 - Cognitively, this also suggests that there is a solution available if we just try hard enough, despite the uncertainty of predictions ($\alpha = 0.001?$)
- Anticipation requires mitigation, adaptation, resilience, and acceptance of inevitabilities

Wicked Problem Mitigation

- Accepting that there are unforeseen contingencies and inability to account for all perspectives
- Understanding that incremental approaches may yield long-term benefits, despite short-term failures
- Sharing responsibility across sectors in a collaborative effort: government, private industry, NGOs, and citizens need to overwhelm the issue
- Risk management through education and behavior modification to build inclusivity

Best Practices for Dealing with Wicked Problems of DRM

- Disasters are social problems that cannot rely exclusively on technical solutions
 - Approach DRM as a social enterprise project with an attitude of anticipation, rather than avoidance
- Knowledge: conveying the unpredictable, unknown elements of DRM that can be mitigated
- Consultation: getting stakeholder input on concerns and capacities
- Partners: extending training opportunities and delegating responsibilities to all sectors