

## Evaluation Approaches to Mass Disaster

Karyn Hicks  
Programs Advisor  
Government NWT

### **Preface**

This paper is an overview of a few organizations who undertake evaluation of disaster situations and planning. It is not a comprehensive list. The evaluation methodologies utilized by similar organizations as well as those employed by disaster researchers deserve further study. Many thanks to those organizations who have posted their work online for us to learn from and to Liesel Ritchie, Mike Scriven and Duane Gill who have shared their work.

### **Background**

#### AEA's Efforts

1. AEA reached out to the Southeastern Evaluation Association.
2. AEA tried to reach its members in the area hit by the storm.
3. AEA contacted the evaluation unit at the Red Cross
4. AEA called the evaluation coordinator at the Centers for Disease Control and prevention.
5. Tried to connect with FEMA.
6. Claremont Graduate University offered to take in evaluation graduate students displaced by the storm.
7. AEA/CES responded to potential conference attendees either displaced by the hurricane or deployed for hurricane support.
8. Opened a slot on the conference program.

#### National Council and Advocacy Committee

- ◆ Pitched to the advocacy Committee
- ◆ Agreement from National Council to explore subject
- ◆ Return to advocacy committee for discussion

#### Define Disaster 1

A disaster (from Latin meaning, "bad star") is the impact of a natural or man-made event that negatively affects life, property, livelihood or industry often resulting in permanent changes to human societies, ecosystems and environment. (Note that the event itself is not a disaster; it is the impact which is called a disaster.)

Define Disaster 2

"[An event] . . . concentrated in time and space, in which a society or a relatively self-sufficient subdivision of society, undergoes severe danger and incurs losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented." (Fritz 1961:655)

**Natural & Technological Disaster Stage Models (Ritchie and Gill)**

Natural disasters

- Often predictable
- Not preventable
- Associated with perceived *lack* of control
- Rooted in nature; considered acts of God

Man Made Disaster

- Result of technological malfunctions, human error,
- Not predicted but perceived to be preventable;
- identifiable parties to hold accountable
- Associated with perceived *loss* of control
- Caused by humans
- Widespread sources

Phases of Disaster	
Warning Threat Impact Rescue Inventory Remedy Recovery Rehabilitation	♦ PLAN  ♦ RESPOND  ♦ RECOVER

Major Activities	
<ul style="list-style-type: none"> <li>♦ Public Health</li> <li>♦ Medical Care</li> <li>♦ Water and Sanitation</li> <li>♦ Shelter and Clothing</li> <li>♦ Food</li> <li>♦ Energy</li> <li>♦ Supplies</li> <li>♦ Search and Rescue</li> <li>♦ Public Works and Engineering</li> </ul>	<ul style="list-style-type: none"> <li>♦ The Environment</li> <li>♦ Logistics and Transport</li> <li>♦ Security</li> <li>♦ Communications</li> <li>♦ Economy</li> <li>♦ Education</li> <li>♦ Co-ordination and Control</li> </ul>

## EVALUATION METHODS

### OECD

Defines evaluation as:

“An assessment, as systematic and objective as possible, of an on-going or completed project, program or policy, its design, implementation and results. The aim is to determine the relevance and fulfillment of objectives, developmental efficiency, effectiveness, impact and sustainability. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making process of both recipients and donors”

System-wide evaluations

“It is important to note that there is currently no capacity in the system for regularly promoting and organizing ‘system-wide’ evaluations, despite recognition of the importance of system-wide factors in influencing the effectiveness of a humanitarian response. The Joint Evaluation of Emergency Assistance to Rwanda, for example, was carried out only due to the efforts of a few key individuals, who pushed the process forwards”.

### **OECD Evaluation Criteria**

Evaluation criteria help frame the types of questions asked of a project or program. Those used in the OECD/DAC definition of an evaluation – “an examination, as systematic and objective as possible, of an on-going or completed project or program its design, implementation and results, with the aim of determining its efficiency, effectiveness, impact, sustainability and the relevance of its objectives”.

- ◆ Efficiency
- ◆ Effectiveness
- ◆ Impact
- ◆ Relevance
- ◆ Sustainability
- ◆ Connectedness
- ◆ Coherence
- ◆ Coverage

### UNHCR

“Evaluation in post-disaster situations is not a simple task. The situations are dynamic and quick to change. In order to have an accurate evaluation that can deal with the obstacles discussed above, it is necessary that the evaluation be designed at the outset of project planning.”

Evaluation Guidelines (Principles?)

- ◆ Transparent
- ◆ Independent
- ◆ Collaborative
- ◆ Relevant

(These are how you want to evaluation to be, not how to do it)

### World Association for Disaster and Emergency Medicine

“Current research methodology and reporting of the outcome of mass medical responses

remain mainly anecdotal, and much of the reported data have little external validity in their application (or not) to other emergency events, as there are no commonly established criteria, factors or yardsticks.”

Standardized Protocol Includes:

1. Ministry of Health data on the top five major causes of death (Infant mortality rates, life expectancy etc)
2. What makes the difference in outcomes?
  - ◆ Prevalence of endemic diseases
  - ◆ # / type of health clinics and facilities in the community
  - ◆ Number and type of hospitals and burn beds in the country
  - ◆ The degree of sophistication (or not) of the healthcare system
  - ◆ Environmental sanitation methods and facilities
  - ◆ Availability and supply of potable water, and water for fires
  - ◆ Sources and adequacy of food supplies
  - ◆ Nutritional status of the population
  - ◆ Population distribution and demography
  - ◆ Schools and literacy
  - ◆ Degree of community participation in local decision making
  - ◆ Degree of population awareness of the local risks
  - ◆ Degree of socio-economic stability
  - ◆ Local, national and regional transport facilities
  - ◆ Socially-focused voluntary organizations and NGOs
  - ◆ The existence or not of community health planning and preparedness
  - ◆ Newspaper, radio, television and other media civic programs
  - ◆ Relation between the health authorities and fire departments

**Tsunami Evaluation Coalition**

Early in January 2005, in recognition of the added value that joint evaluations bring to the humanitarian sector, a number of ALNAP members began to discuss how best to coordinate evaluations of tsunami response. The intention was twofold:

- ◆ To promote a sector-wide approach to evaluations of the tsunami response in order to optimize sector-wide learning.
- ◆ To develop, test and validate procedures or the future timely establishment of such an evaluation coordination (coalition) mechanism that could facilitate such an approach.

Joint Eval of Response to Indian Ocean Tsunami.

- ◆ Mostly file reviews, desk reviews, literature and document reviews. Some semi structured interviews.
- ◆ The thematic evaluations varied in both management and research structure – for example, three of the five evaluations were managed by multi-agency Steering Committees while two employed multiple research teams. It is anticipated that the variety of models used will increase the learning potential when it comes to assessing the relevance of the TEC approach for future joint evaluation processes.

### **Cash for Repair & Reconstruction Housing Reconstruction Sri Lanka**

Goal – analyse the process and impact of the Swiss support to the CfRR Project. Identify strengths and weaknesses of the project and propose methods for improvement

- ◆ Relevance
- ◆ Effectiveness and Appropriateness
- ◆ Quality of Houses
- ◆ Beneficiaries
- ◆ Collaboration
- ◆ Methodology- The methodology must be participative and focus on lessons learnt

### **ALNAP**

ALNAP - Active Learning Network for Accountability and Performance In Humanitarian action. Established in 1997, following the multi-agency evaluation of the Rwanda genocide. It is a collective response by the humanitarian sector, dedicated to improving humanitarian performance through increased learning and accountability. Promoting the use and quality of evaluation of humanitarian action is a key theme:

- ◆ Training Evaluators, Module 1,2,3
- ◆ Team Approach
- ◆ Quality Proforma

### **Public Safety and Emergency Services Canada**

PSEPC works closely with the following partners to ensure that disaster mitigation policies, programs and best practices are integrated nationally and internationally. They say they use the TBS Guidelines /Policy on Program Evaluation.

- ◆ Canadian Natural Hazards Assessment
- ◆ Canadian Risk and Hazards Network
- ◆ Institute for Catastrophic Loss Reduction
- ◆ International Strategy for Disaster Reduction

#### Publications

- ◆ Community Safety and Crime Prevention, Phase II, Summative Evaluation of the National Strategy 04/05
- ◆ National Crime Prevention Strat Phase II, Evaluation
- ◆ Joint Emergency Preparedness Program - Evaluation of Federal Contribution Program, 2004
- ◆ Research and Development Program, Evaluation Integrated Proceeds of Crime, an Evaluation
- ◆ Aboriginal Community Corrections Initiative Evaluation
- ◆ An independent evaluation of the Joint Emergency Preparedness Program (JEPP) was conducted during September-November 2003 (unsure of protocol). Mainly a funding program for Disaster preparedness

## **FEMA**

### **Evaluation Training and Proficiency Demonstration Requirements:**

- ◆ Collecting data as required on the evaluation forms.
- ◆ Attending staff meetings as observers to collect data.
- ◆ Ensuring that information generated during the exercise is properly maintained and reported.
- ◆ Notifying the evaluation team chief when the exercise play varies from the master scenario events list (MSEL).
- ◆ Performing other duties as directed by the evaluation chief.
- ◆ Purpose of the evaluation is to evaluate situational exercises.
- ◆ Post Katrina Congressional hearing held – turned political

## **NWT Chief Coroner**

- ◆ Against SOP – Checklist
- ◆ Observation
- ◆ Filming
- ◆ Tabletop debriefing

## **USAID**

- ◆ No prescriptive methodology
- ◆ Directs users to AEA and Evaluators Institute
- ◆ Excellent on-line resources
- ◆ <http://evalweb.usaid.gov/resources/sources.cfm>

## **M. Scriven**

- ◆ Impact of D1
- ◆ Impact of D2
- ◆ Impact of later and total response to event
- ◆ Impact of preparation for D1
- ◆ Impact of disaster preparation for D2
- ◆ Impact of disaster on knowledge base, or, lessons learned

In cases of some technological disaster one can add:

- ◆ Who was to blame?
- ◆ What was the cause of the D?

## **Canadian Emergency Management College**

- ◆ Basic Emergency Management
- ◆ Emergency Operations Centre Management
- ◆ Emergency Site Management
- ◆ No Evaluation Courses

## **Homeland Security**

- ◆ This DHS/ODP methodology requires evaluation of organizational, operational, and technical capabilities at the task, agency/discipline/function, and mission levels. As part of its training strategy, DHS/ODP developed Emergency Responder Guidelines that identify the essential tasks that response agencies must perform to effectively prevent, respond to, and recover from a threat or act of terrorism.
  - ◆ Task-level performance
  - ◆ Agency/function-level Performance
  - ◆ Mission-level performance
- ◆ Performance measures for the essential tasks associated with the response to threats or acts of terrorism are being developed for use in evaluating performance through exercises.

### **Exercise Options**

1. Workshops
2. Seminars
3. Tabletops
4. Games
5. Drills
6. Full Scale Exercises
7. Command Post (CPX)

## **Red Cross/Red Crescent**

- ◆ Independence
- ◆ Transparency
- ◆ Pluralism
- ◆ Inclusiveness
- ◆ “The learning opportunities for the Federation and the National Societies are increased by sharing monitoring and evaluation activities; it is wasteful of resources and unhelpful to beneficiary communities to multiply evaluation exercises beyond what is necessary for accountability and learning purposes. However it also is recognized that individual National Societies may want or need to carry out their own evaluations.”

### **Evaluation Framework Guiding Principles**

- ◆ Approach
- ◆ Objectives
- ◆ Scope
- ◆ Periodicity
- ◆ Teams
- ◆ Reporting

## **Relief and Rehabilitation Network**

### Evaluating Humanitarian Assistance Programs in Complex Emergencies

- ◆ Evaluations should comment on the impact of humanitarian aid programs, and not focus solely on monitoring the efficiency of project implementation. However, humanitarian programs often take place in complex, confused circumstances, where plans change regularly, where information is scarce and where little is predictable. As a result,

qualitative and deductive methods of measuring impact, that involve beneficiaries, are likely, in general, to be more appropriate than methods that seek to be 'scientifically rigorous'.

- ◆ Evaluations of humanitarian assistance programs should include an assessment of measures to provide protection to the affected population. In many emergency situations, the first needs of a population under threat may be protection from murder and harassment, as well as from discrimination that can lead to exclusion from basic services. The evaluation should also assess what measures have been taken to mitigate potential negative consequences of the humanitarian program.

### **Some Journals or Resources Covering Disasters**

- ◆ Disasters
- ◆ International Journal of Epidemiology
- ◆ EM-DAT: Emergency Disasters Data Base. The OFDA/CRED International Disasters Data Base at [Http://Www.Em-Dat.Net](http://www.em-dat.net)
- ◆ Emerging Infectious Diseases
- ◆ Injury Prevention
- ◆ BMC Emergency Medicine
- ◆ Medical Emergencies And Mass Casualties
- ◆ Annals of Epidemiology
- ◆ International Journal of Mass Emergencies And Disasters
- ◆ The Internet Journal of Rescue And Disaster Medicine
- ◆ Disaster Management & Response
- ◆ Natural Hazards Informer
- ◆ International Journal of Contingencies And Crisis Management,
- ◆ International Journal of Disaster Prevention & Management.
- ◆ The Australian Journal of Emergency Management
- ◆ World Disasters Report
- ◆ Natural Hazards Review
- ◆ Journal of Contingencies and Crisis Management
- ◆ International Journal of Emergency Management
- ◆ Disaster Prevention and Management
- ◆ Journal of Hazardous Materials
- ◆ Environmental Hazards

### **Disaster Journal Example**

#### Items Considered Under Methods

- ◆ Target populations
- ◆ Study design
- ◆ Sampling plan
- ◆ Time frame for study
- ◆ Potential partners/collaborators

McDonnell S, Troiano RP, Barker N, et al. Evaluation of long-term community recovery from hurricane Andrew: Sources of assistance received by population groups.  
Disasters 1995;19:338-47

Summary of Methods	In Fairness
<ul style="list-style-type: none"> <li>◆ Organizational Focus</li> <li>◆ Table Top</li> <li>◆ Exercise Checklists</li> <li>◆ Anecdotal</li> <li>◆ Conditional Indicators</li> <li>◆ Want participatory</li> </ul>	<ul style="list-style-type: none"> <li>◆ Infrastructure And Standards</li> <li>◆ Expertise</li> <li>◆ Political Repercussions</li> <li>◆ Competing Demands</li> <li>◆ Difficult to define the evaluand</li> <li>◆ Timing – you can't choose the time</li> </ul>

**THEN HOW?**

Evaluate at Each Phase

Phases of Disaster	
<p style="text-align: center;">Warning Threat Impact Rescue Inventory Remedy Recovery Rehabilitation</p>	<p style="text-align: center;">Evaluate the planning  Evaluate the response  Evaluate the recovery</p>

Using A Sectoral Approach

Major Activities	
<ul style="list-style-type: none"> <li>◆ Public Health</li> <li>◆ Medical Care</li> <li>◆ Water and Sanitation</li> <li>◆ Shelter and Clothing</li> <li>◆ Food</li> <li>◆ Energy</li> <li>◆ Supplies</li> <li>◆ Search and Rescue</li> <li>◆ Public Works and Engineering</li> </ul>	<ul style="list-style-type: none"> <li>◆ The Environment</li> <li>◆ Logistics and Transport</li> <li>◆ Security</li> <li>◆ Communications</li> <li>◆ Economy</li> <li>◆ Education</li> <li>◆ Co-ordination and Control</li> </ul>

**Evaluate the Planning**

- ◆ Tracking the SOPs
- ◆ Training with communication devices
- ◆ Observation
- ◆ Recording

- ◆ Testing data storage and collection
- ◆ Debriefing
- ◆ Formulating Evaluation Criteria

**Evaluate the Response**

- ◆ Tracking the SOPs
- ◆ Tracking indicators /multivariate analysis
- ◆ Observation and Recording
- ◆ Employment of communication devices
- ◆ Using retired professionals
- ◆ Media Monitoring
- ◆ Debriefing against evaluation criteria
- ◆ Participatory and 4<sup>th</sup> Generation methodologies where possible
- ◆ Documenting unanticipated events

**Evaluate Recovery**

- ◆ Standard program evaluation protocols where programs are deployed
- ◆ Use of needs assessments
- ◆ Use of program design
- ◆ Be clear on evaluand
- ◆ Be patient with length of time to adjust
- ◆ Be aware of expectations, needs vs. demands

Uber –Evaluation diagram

**Tread Carefully!!**

- ◆ We might not be welcome
- ◆ The impact of culture and tradition cannot be underestimated
- ◆ Be aware of imposing own values
- ◆ Evaluators must not to get in the way of relief efforts, or add to the stress on the infrastructure.
- ◆ There will be competing priorities
- ◆ Data storage and management will be problematic
- ◆ Be mindful of personal vs. program efforts and the perception of criticism
- ◆ Imposing on victims and responders who are grieving may lead to additional stress
- ◆ Need to be clear – are we evaluating the impact of the services /program or evaluating the impact of the disaster itself?

Challenges of Conducting Disaster Evaluation/Research Dr. Liesel Ritchie/Dr. Duane Gill	
<ul style="list-style-type: none"><li>◆ Ethical considerations</li><li>◆ Research design considerations</li><li>◆ Coordination issues with other social scientists</li><li>◆ Limited/dated baseline data</li><li>◆ Cultural considerations</li><li>◆ Funding/Logistics</li></ul>	<ul style="list-style-type: none"><li>◆ Community entrée</li><li>◆ Getting into the field</li><li>◆ Accommodations</li><li>◆ Scheduling interviews</li><li>◆ We are “the instruments”</li><li>◆ “Duh” factor</li><li>◆ Presenting findings</li></ul>

### **How Can We Help As a Profession?**

- ◆ Assist in the comparison of what was planned as to what was delivered.
- ◆ Contribute to the body of knowledge of disaster evaluation both practical and theoretical.
- ◆ Promote good practice in evaluation
- ◆ Train first responders to collect evaluative information.
- ◆ Evaluate new technologies to help capture data.
- ◆ Assist organizations to develop evaluation frameworks.
- ◆ Work with associations attached to first responders to train retired professionals.
- ◆ Help organizations to develop their first response performance criteria

Examine GDIN - On May 2, President Clinton issued an Executive Order directing the executive branch of the U.S. government to support the establishment of a "Global Disaster Information Network [GDIN] to use information technology more effectively to reduce loss of life and property from natural and man-made [sic] disaster.

### **How Can We Help As a Society?**

CES would have to examine their mandate to see if it would be appropriate to provide assistance during critical incidents.

- ◆ See if there are federal funds available to assist in the training of volunteers
- ◆ List the background professions of our evaluators
- ◆ Find out who would be willing to volunteer
- ◆ Make plans for an administrative structure
- ◆ Do outreach to involved NGOs and Govm't
- ◆ Liaise to first responder professional organizations
- ◆ Find a data base sponsor

### **Consider Our Own Membership**

On a smaller scale, we should be considering assistance to our own professionals and members in times of hardship. Could we have made an offer to the AEA to donate evaluation textbooks, old laptops, office space, or even shelter? What could we do in the event of another ice storm in Quebec? What could we offer to someone who has lost everything from a house fire or a flood? CES is a small professional organization. We can become a closely knit community and support each other.

### **How Can We Help As Individuals?**

- ◆ Volunteer to input field data/data analysis
- ◆ Test communication /recording devices
- ◆ Join the DEMA TIG
- ◆ Speak to your advocacy committee rep
- ◆ Volunteer with EMO/SAR (go to school)
- ◆ Volunteer with disaster orgs in an evaluative capacity
- ◆ Stay connected and informed
- ◆ Pick one Organization to review methodology
- ◆ Pick one Journal to Review for content
- ◆ Do one related evaluation this year

10/19/2006

◆ Publish

**Recommendation**

START SMALL AND BUILD OUR CORPORATE KNOWLEDGE  
AND EXPERIENCE