CHARACTERIZATION OF THE SUPPLY CHAINS IN THE AFTERMATH OF KATRINA: LOGISTICAL ISSUES AND LESSONS FROM AN INTEGRATED SOCIAL SCIENCES-ENGINEERING PERSPECTIVE

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A. MOTIVATION:

Delivering critical supplies (e.g., food, water) to a disaster site often becomes a difficult task because of the severe damages to the physical and virtual infrastructures and the very limited or non-existent transport capacity. The situation is aggravated by the lack of: (a) knowledge about the particulars of how formal and informal (emergent) supply chains operate and interact with each other; b) methods to properly analyze and coordinate flows of priority and non-priority goods; (c) scientific methods to analyze logistic systems under extreme conditions. This project contributes to the study of this important problem by characterizing the key logistical issues that emerged during the response to Hurricane Katrina. The research is based on public accounts of the event and interviews conducted during several field visits to the impacted area.

C. KEY RECOMMENDATIONS (PRELIMINARY)

(1) Creation of an Emergency Logistics Training Program (most individuals involved did not have formal training on Logistics and simply were not prepared for the task)

(2) Improvement of the Robustness and Interoperability of the Federal, State and Local Computer Systems:

(3) Development of Regional Blanket Purchasing Agreements

(4) Increase in Asset Visibility

(5) Development of Regional Compacts for Pre-positioning of Critical Supplies

(6) Implementation of Proactive Donation Coordination Plans

B. KEY PRELIMINARY FINDINGS:

1. It is incorrect to think of the logistical operations to a disaster site as a unified supply chain. It is a dynamic multi-layered response in which dozens of supply chains overlap, complement, and compete for scarce resources.

2. Improving the efficiency of the collective response to a disaster requires incorporation of social science's state of the art thinking into state of the art supply chain modeling.

3. The governmental supply chain was plagued by many barriers:

3.1 Technical: the computer system used by the State of Louisiana did not interface with FEMA's;

3.2 Technological: many trucks loaded with critical supplies allegedly could not reach their destinations or could not be tracked because of the lack of Global Positioning Technology;

3.3 Logistical: FEMA failed to set up blanket agreements with providers of critical supplies (which necessitated requesting bids and translated into delivery times of 2-3 weeks);

3.4 Financial: the LA Governor allegedly decided not to preposition critical supplies to await for the emergency declaration (to avoid having to pay for the supplies);

3.5 Training: many individuals directly involved in handling of supplies had no formal training in logistics;

3.6 Institutional: there was no solid understanding of what each agency was supposed to do.

4. As a result of (3), improving the efficiency of the logistics of critical supplies to an impacted site necessitates the multidisciplinary study of the problem.

5. The volunteer organizations saved the day. Horrendous as it was, the Katrina debacle would have been much worse if not by the work of the volunteer organizations that: pre-positioned supplies, sent experienced and motivated leaders to the field, and demonstrated great creativity, ingenuity and flexibility in the face of disaster.