

ABSTRACT FOR POSTER ON THE NEW ORLEANS KATRINA DISASTER AND US FLOOD POLICY

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Introduction

On August 29, 2005 the hurricane Katrina, one of the strongest storms to strike the coast of the United States (US) in the past 100 years, devastated the city of New Orleans and much of the Gulf of Mexico coastline in the states of Louisiana and Mississippi. A second major hurricane, Rita, hit the Louisiana and Texas coastlines a few weeks later. In the aftermath of these disasters the world was shocked by the level of destruction and the failure of local, state and federal agencies to effectively coordinate emergency response systems. Over a million people lost their homes and jobs, and more than 1500 people lost their lives. Whole districts of New Orleans were destroyed and may never be rebuilt. Although some residents have returned to the city, the majority of displaced and relocated citizens are still temporarily or permanently scattered in communities throughout the country. In the aftermath of devastation and loss on this scale, flood management and emergency response policies in the US are being reconsidered at all levels of government.

Katrina has generated a public policy debate in the US focusing on several key questions. Are current flood plain development policies and existing flood management systems working? What priorities have driven flood management policy decisions, and what are the social, economic and environmental consequences of those decisions? What impacts have levees, flood plain development and the maintenance of navigation channels had on the health of the river system and long term flood conditions in the Mississippi River Basin? With one of the worlds most advanced and precise flood forecasting and warning systems, why did federal, state and local governments fail to implement effective emergency response plans? Most importantly, what needs to be done to improve flood management and emergency response systems to avoid similar disasters in the future? These are some of the key questions that we intend to address in our paper and presentation on the Katrina disaster at the MRC 4th Annual Flood Forum in Siem Reap.

Focus of Presentation – Three Issue Areas

The History of Flood Management in the Mississippi River Basin: Two Hundred and fifty years ago the Mississippi River Basin, which encompasses forty-one percent of the continental US, was a natural flood plain river system. In this short period of time our nation transformed the Mississippi River Basin into one of the most engineered river systems in the world by building an extensive network of levees, dams and other structures to provide flood protection; maintain a commercial navigation system; produce energy; and impound water for municipal, industrial and agricultural uses. We drained vast areas of wetlands throughout the basin and turned the lower river into a sealed navigation channel that functions like a pipeline, discharging directly into the Gulf of Mexico seasonal flood waters that have nourished and restored the Mississippi River delta region for thousands of years. As a result, the hydrological character of the river basin, its delta and its rich estuaries have been radically altered, increasing the risk of catastrophic floods from hurricanes and major rain storms.

Our nations flood management systems have provided many economic and social benefits, but they have also created serious environmental, economic and social problems. It is now generally accepted that the combination of intensive flood plain development and the cumulative impacts of structural intervention in the river system have disrupted critical ecosystems throughout the basin. This in turn has diminished the capacity of the river system and the delta region to naturally slow down and absorb flood waters. As a result of these and other environmental impacts (including oil and gas production), Louisiana is losing up to 40 acres of coastal land mass each year, further increasing New Orleans' vulnerability to storms. In this part of our presentation we will provide an

historical overview of flood management systems in the Mississippi River Basin - focusing on the benefits and costs of structural flood management systems and the need for informed and balanced policy decision making at the earliest stages of flood management planning. We will also discuss mitigation and ecosystem rehabilitation strategies to improve the capacity of the river to naturally manage flood waters.

Adequacy of Flood Protection Systems in New Orleans: Most of the City of New Orleans is below sea level. Essentially, the city is built in a bowl surrounded by levees that protect it from Mississippi River flood waters coming from the north, and hurricane storm surges coming from the Gulf of Mexico in the south. Massive pumping stations pump rain water out of the city during normal rain storms, but as Katrina demonstrated, those pumps are no match for flood waters when the levee system is breached. The US Army Corps of Engineers (Corps) designed and built the New Orleans levee system, but local levee boards maintain the levees and the City of New Orleans Sewage and Water Board maintains the pumping stations.

For many years flood managers and flood management agencies have been raising questions about the adequacy of the New Orleans levee system, arguing that the levees should be upgraded to protect the city from a category 5 hurricane. After the levee system failed during Katrina, the Corps was openly criticized for designing an inadequate flood protection system and investing limited resources in questionable navigation canal and flood plain development projects - when it allegedly should have been investing in levee upgrades. In fairness to the Corps, it is the US Congress that determines the Corps priorities by deciding which projects the Corps is authorized to undertake and appropriating funds to carry them out. Thus, a key issue in the policy debate over the failure of the Corps to strengthen the New Orleans levee system is the failure of the US Congress to prioritize, authorize and fund levee system improvements.

The failure of the New Orleans levee system has raised other unsettling public policy issues. Given New Orleans' topography, its continuing subsidence and the alarming loss of barrier islands and estuary grasslands on the Louisiana Gulf Coast, has protecting the City of New Orleans from flooding become an unrealistic goal? Even if Congress decides to improve the levee system, will the City of New Orleans rebuild districts in the lower regions of the city (like the lower 9th ward) that are most susceptible to flooding and property damage? If rebuilding is allowed, will residents be required to elevate their homes or take other measures reduce the risk and cost of property damage? Flood insurance is another important issue. Tens of thousand of New Orleans residents carried federally subsidized flood insurance policies. The payment for claims under these policies is expected to exceed \$22 billion dollars, threatening to bankrupt the National Flood Insurance Program. Can our nation afford to continue compensating home owners and businesses in flood plains for property damage that is foreseeable and reoccurring?

Many of the most vulnerable districts in New Orleans were primarily inhabited by low income African Americans before the flood, making social justice issues a central theme in the debate over rebuilding the city. This part of the presentation will focus on the flood protection challenges New Orleans is facing and the social, economic and environmental issues underlying these challenges.

Emergency Response Planning and Coordination: The failure of local, state and federal government agencies to implement an effective emergency response plan is the major issue dominating the Katrina disaster public policy debate. Both the President and Congress commissioned studies to determine why our emergency response systems failed. These reports determined that agencies at all levels of government failed to plan ahead of time for an orderly evacuation of the city (particularly in regard to low income residents without transportation resources); failed to coordinate the respective roles and responsibilities of emergency response agencies; failed to establish an effective command centre to direct emergency response activities; failed to adequately protect the health and welfare of tens of thousands of New Orleans residents who were abandoned in the evacuation without transportation, food, water, medicine or adequate

shelter; and subjected over a million people to a chaotic relocation plan that split up families, squandered government resources and caused extensive economic hardship.

In this part of the presentation we will focus on three important lessons learned from Katrina. First, good planning is essential to the successful implementation of emergency response systems. It should include key local, state and federal agencies and the public, and the planning needs to be completed before a disaster occurs. Each agency needs to clearly understand the needs of the public, its role and responsibilities, the roles and responsibilities of other agencies, critical logistic and tactical details, and the goals and objectives of the emergency response plan. This seems like a simple proposition, but as the Katrina disaster illustrates, the importance of good planning is sometimes underestimated and/or overlooked by bureaucracies.

Second, when an emergency response plan is in place the public needs to be informed about it. People need to know who is there to help, what they should do to protect themselves and where to go for the help they need. Tens of thousands of people in New Orleans, most of them poor, did not know what to do when the flood came. Lack of public education is one reason why the death toll was so high and so many people became trapped in dangerous situations. Finally, more needs to be done to help people rebuild their lives and communities after the disaster event. Planning ways to mitigate economic hardship, emotional stress and the loss of community as quickly as possible should be a top priority.

Conclusion

We have all learned over time that managing river systems is a complicated process, and anything that is done to alter or control a river has far reaching economic, social and environmental impacts. By sharing knowledge policy makers, resource managers and communities in the Mississippi River Basin, the Mekong River Basin and other river basins worldwide can inform each other about ways to improve water resource management systems. This is the goal of our power point presentation, which will focus on the issues presented in this abstract. We will also submit a detailed bibliography with a wide range of relevant research articles, publications, conference papers and news articles pertaining to the Katrina disaster and US flood plain management policies.