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[Environment](#), [Disaster](#)



Introduction

Natural hazards and disasters such as floods, bush fires, typhoons, tornadoes, earthquakes among others have caused immense loss of life (human, animal and even plant life) as well as destruction of property for as long as the world has existed. Advancements in education, science and technology have enabled man to predict the occurrence, prepare and even respond better to natural disasters than was the case several years ago (Srivastava & Lucie, 462). Today, governments have set up special departments such as the Federal Emergency Management Agency (FEMA) housed under the Department of Homeland Security as a special team to build, sustain and improve the country's capability to prepare for, protect against, respond to, recover from and mitigate all natural disasters (Hyndman & Hyndman, 16). These activities are the very core of Tom Daniels and Katherine Daniels book, Environmental Planning Handbook. Of special focus is chapter 12 "Planning for Natural Hazards and Natural Disasters" (257). The chapter provides the main assertions on planning for disasters and coupled with some outside sources discusses how government departments, NGOs and the private entities can plan effectively for natural disasters both in the short and the long term. The first and most crucial parties charged with Planning for Natural Hazards and Natural Disasters are the federal, state and local governments. Daniels and Daniels address integration of local planning initiatives and hazard mitigation measures as well as examples of federal and state planning initiatives. In a hierarchical structure Chapter 12 "Planning for Natural Hazards and Natural Disasters" outlines the challenges of planning for disasters at the national (federal

government level), at the state level and at the Local (County) government levels. The three levels of government can coordinate and effectively plan how to mitigate, and prepare for natural hazards and disasters.

The challenges of planning for disaster resistant communities

The challenges of planning for disaster resistant communities have been adequately addressed in the book. Daniels and Daniels note the challenges to include, failure to predict accurately the timing of a disaster, lack of community-based organizations, demographic dynamics such as increased populations even in disaster prone areas as well as increased immigration and relocations (257). Hyndman and Hyndman, opine that economic challenges and social-economic constraints on the federal government's purse often leads to inadequacy funds to comprehensively address all possible natural disasters (25). Other challenges include lack proper enforcement of rules and regulations to guard against human activities that can trigger natural calamities. For instance failure for the federal government to control forest activities has been attributed to some wild fires such as the ones in California.

The creation of disaster resistant communities has been complicated by coordination challenges in bringing together all the possible stakeholders. Srivastava & Lucie notes that in order to contain wild fires the federal government's FEMA needs to liaise with the U. S. Forest Service, the meteorological department to tell the pattern of winds and the weather conditions (16). As such, there is usually ambiguity on the handling of some

issues. This leaves the community vulnerable to some types of natural disasters.

Federal planning for natural disasters and hazard mitigation

The best way to prevent losses during natural disasters is to put in place effective hazard mitigation measures. The federal planning for natural disasters has been mandated upon FEMA. FEMA has created the Federal Insurance and Mitigation Administration (FIMA) which works with communities across the country helping them analyze to risks and prioritize their mitigation measures (Daniels & Daniels, 262). FIMA offers hazard mitigation grant program, building scientific and technological capacity in communities to enhance disaster resiliency.

As such, the Federal Government's response and planning for Disasters cannot be faulted although it needs improvements in areas such as use of technology in forecasting some disaster issues such as floods, storms among others.

The Federal Government through the Department of Agriculture has provided the USDA Emergency Preparedness, Response and Recovery website as a source of information on how people can get resources during emergencies. The USDA works closely with state and federal government agencies such as FEMA to mitigate risks during natural disasters and severe weather (Storms, floods, wild fires, hurricanes etc) (Hyndman & Hyndman, 41). The USDA also provides mitigation measures against outbreaks and accidents (avian influenza, oil spills) as well as emergencies necessitated by chemical or nuclear radiations. The ASDA coordinates with FEMA and the Center for Disease Control (CDC) in preparation planning for natural

disasters. It guides people on how to keep food safe during emergencies, how to get foods and housing assistance.

FEMA also has a Risk Analysis Division which applies Engineering, Advanced Technology as well as planning to determine the potential impacts of an impending natural disaster. The division also develops strategies to manage the risks. Risk analysis includes assessing critical information before and after the disaster strikes, developing and maintaining an inventory of the disaster as well as supporting mitigation planning (Hyndman & Hyndman, 42).

Some of the most successful mitigation measures are Flood Hazard Mapping and The national Dam Safety program. Srivastava and Lucie states that Flood Hazard mapping through the National Flood Insurance Program (NFIP) identifies flood hazards, assesses the risks and partners with state governments and other interested parties to provide accurate flood hazard and data necessary to guide the local authorities in mitigation efforts (463). The NFIP has managed to use powerful software such as Hazus-MH which is a risk assessment software used to analyze potential losses in case of floods, earthquakes and hurricane winds. The software makes use of scientific and engineering knowledge coupled with Geographic Information System (GIS) technology to provide analysis on the disasters (Srivastava & Lucie, 463). The National Dam Safety program is another successful program by the federal government that has for the last 25 years worked to protect Americans from dam failure.

FEMA's hazard mitigation support trickles down to the local communities through the following programs: The Hazard Mitigation Grant Program

(HMGP), Pre-disaster Mitigation (PDM), Flood Mitigation Assistance (FMA), Repetitive Flood Claims (RFC), Severe Repetitive loss (SRL)

All states must have hazards mitigation plans approved by FEMA in order to remain eligible for federal government mitigation and public assistance funds. This is in accordance with the Disaster Mitigation Act of 2000. Each state is required to profile the most likely natural disasters to affect the region (Daniels & Daniels, 271). FEMA offers support to states based on priority of the prevailing threats. States in the Southeast (Louisiana, Mississippi, New Orleans and others) are mostly supported to respond to floods and hurricanes while those on the West Coast (California, Oregon, Alaska, Washington) are mostly empowered to respond to wild fires and earthquakes. This however does not rule out federal government support on other natural disaster that may hit different regions.

All state governments are required by the Disaster Mitigation Act to establish State Emergency Management Division (EMD). Under the EMD many states such as Washington, California, Louisiana, and Ohio among many others have State Hazard Advisory Team (SHMAT) which is mandated to review the State Hazard Mitigation Plan (SHMP). In regard to mitigation against natural disasters, many SHMPs have five goals or objectives.

The first is the protection of life. This involves improvement of systems that provide warning and emergency communications. It also entails the amendment of state laws so that they effectively address hazard mitigation with a special focus on the most prevalent natural disaster(s) in that state (Hyndman & Hyndman, 17). Moreover, protection of life entails the protecting vulnerable populations say through relocations through state

agencies. Lastly this goal targets to train emergency responders.

The second goal is protection of property. This entails the protection of assets especially buildings whereby the state governments stipulates the building standards and regulations to minimize chances of extensive damage during disasters (Srivastava & Lucie, 465). For instance all buildings are required to have lightning arrestors to prevent extensive damage during storms and lightning.

The third goal of state governments is the promotion of sustainable economies. This calls for the provision of incentives for mitigation initiatives and the formation of partnerships to leverage and share resources. The fourth objective is usually protection of the environment, while the fifth objective entails increasing public awareness and preparedness for disasters. The state governments conduct trainings to help people understand natural disasters and the risks they pose. The state governments also increase hazard information by availing it on relevant state agency websites. The state government also involves the people in the development and formulation of measures to respond to natural disasters.

The SHMATs are meant to work with local jurisdictions to support and encourage local hazard mitigation at the counties and the sub counties levels. SHMAT officials in each state do the following. First they conduct on-site visits. Secondly, they Coordinate information requests of state government. Thirdly, they assist local jurisdictions to obtain grant funding for plan development and review and lastly they participate in local plan development activities (Srivastava & Lucie, 465).

The planning of mitigation measures by the state includes detailed of the

state process to support local jurisdictions. This entails establishment of funding modalities as well as dispatch of technical support within the state areas that are prone to a natural disasters.

States are also required by FEMA to undertake 5-year update cycles in order to review new areas of concern, revise budgetary requirements for mitigation and also address demographic changes within areas prone to disasters. It is especially important for the state government to provide detailed demographic analysis (population size, density, distribution, gender percentages as well as the age profiles) of communities living in disaster prone areas within the state (Srivastava & Lucie, 466). This data helps the state government to plan, prepare and allocate resources (money, technical assistance, medical supplies etc) that can be readily accessed in case of a natural disaster.

The state is also mandated to ensure that infrastructure within the states areas prone to disasters are maintained in proper condition. For instance the state governments support the local jurisdictions to maintain sewerage systems in proper condition to minimize the spread of waterborne diseases (cholera, typhoid and others) in case there is flooding which might contaminate the domestic water piping system.

During disasters there is a Regional Response Coordination Center in every affected state which is open on 24-hours whenever there is an outbreak of wild fires. At the center about 27 federal government agencies and departments including the American Red Cross offer their concerted efforts to respond to the emergency (Daniel & Daniel, 269). These include the United States Army Corps Engineers, The Department of Interior, United

States Forest Service, Department of Transportation, Department of Health and Human Services as well as the Department of Homeland Security's Infrastructure protection.

Local planning for natural disasters and hazard mitigation

Local planning for natural disasters entails the plans by local jurisdictions to handle natural disasters. The federal and the state governments are concerned more with the formulation of policies as well as offering funding, technical assistance to respond to natural disasters. It is the local governments at the county and sub county levels who actually provide actual and direct mitigations against natural disasters within their communities (Daniels & Daniels, 272).

One of the key responsibilities of the local governments' is to train people in their community on how to avoid activities that might trigger disasters as well as how to respond to disasters. For instance the local government in Orange County in Southern California which is prone to wild fires should advise the residents against activities such as camping, hunting and other activities that might start the wild fires. Moreover the county government should educate the residents on how to respond to natural disasters (the dos and don'ts) during different natural disasters.

The local governments are also mandated to plan and budget on disaster preparedness measures. As such they should prioritize mitigation measures that are of the highest concern to the people. The grant is taken up by the local government and used to purchase supplies and equipment as well as funding emergency operations such as evacuations, traffic control, and shelters. The local communities have been educated on how to respond to

disasters by being shown the assembly points and staging areas where mobilization of resources is carried out.

Local governments are mandated to ensure that they gather all the relevant data about disaster preparedness in their jurisdictions. This includes the demographics of their areas which they later provide to the state and federal governments for considerations in the overall national disaster preparedness strategies.

Conclusion

Natural disasters such as floods, bush fires, wildfires among others has for a long time led to immense losses of life and destruction of property. However advancements in technology and education have enabled people to handle natural resources better. Tom Daniels and Katherine Daniels book, Environmental Planning Handbook addresses complex environmental issues as well as sustainability efforts. Chapter 12 on “ Planning for Natural Hazards and Natural Disasters” addresses planning for disaster resistant communities and how governments can mitigate against natural disasters. Challenges include inaccuracy in the prediction of natural disasters which catches the agencies unaware. There are also demographic challenges such as increased population and settlement in disaster prone areas and inadequacy of funds to respond to disasters among others. The federal government through the Federal Emergency Management Agency (FEMA) housed under the Department of Homeland Security provides a leading role in coordinating mitigation, offering technical and monetary assistance to state and local governments among other roles that support disaster preparedness in the country. The Disaster Mitigation Act of 2000 mandates states to set up

Emergency Management Divisions (EMDs) which in turn set up State Hazard Advisory Team (SHMAT) to handle disaster mitigations. State governments make specific laws to address the most pressing natural disasters within the state and how to co-work with other state governments in regions that are affected by the same natural disasters. Local governments on the other hand are tasked with educating the communities on how to avoid and respond to disasters. They also gather demographic, climatic, social and economic data about disasters and forward to the state and federal governments to help in the formulation of comprehensive disaster mitigation and response measures.

References

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