

Unit One

Overview

Preface

In recent years the United States has experienced an increasing number of disasters which have affected agriculture. The media is filled with stories about droughts, floods, high winds, and hail storms and their impact on farms and communities.

Examples of large-scale disasters include:

- Hundreds of thousands of pigs were evacuated from farms along the Mississippi River during the floods of 1993.
- Several million poultry died in the Delaware-Maryland-Virginia (Delmarva) region heat waves of 1995.
- More than 90,000 cattle froze or drowned due to blizzards and snow melt along the Red River in North Central Midwestern states in 1997.
- Hurricane Floyd in North Carolina caused the death of thousands of pigs and poultry in 1999. Floods caused manure lagoon spills and contamination of the environment.

While large-scale disasters often receive more media attention, more animals and farms suffer from small-scale, localized disasters. Examples of common local disasters include transportation accidents, adverse weather, fires, hazardous materials spills, and disease outbreaks.

The cumulative cost of small-scale disasters to the U.S. usually exceeds the cost of large-scale disasters. That is why disaster preparedness is most effective at the local level, where it is initiated by the people most likely to be affected by the disaster.

During large- and small-scale disasters, farmers and producers can suffer considerable economic losses, the safety and supply of food can be threatened, and animals may be injured or killed. In some instances, people have put themselves and others at risk attempting to rescue livestock, while others have refused to evacuate or go to shelters because of concerns about their animals.

Purpose of the Course

History and research indicate that individuals offer the best protection against losses in disasters. Some of the best information on how to mitigate and respond to disasters comes from the field of emergency management.

By analogy, livestock farmers and producers know how to mitigate the impact of disasters on their farms, because they are experts in livestock agriculture. Emergency managers can help them optimize those efforts, because they are the professionals in a community responsible for preparing the community for disasters and coordinating the response to disasters.

This is an introductory course designed to increase your awareness of what livestock producers, emergency managers, veterinarians, extension agents, and others can do to prevent and reduce the consequences of disasters.

This course is intended to synthesize the knowledge of livestock farmers and emergency managers and develop a unified approach that will mitigate the impact of disasters on livestock agriculture. Therefore, this independent study course is for both livestock farmers and emergency managers.

The course aims to provide livestock farmers with an overview of common causes and typical consequences of disasters. The course then applies knowledge and techniques from emergency management to illustrate how to identify livestock farmers' vulnerability to disasters and what specific actions farmers can take to mitigate disasters.

For emergency managers, the course gives examples of typical problems that can arise with livestock in disasters. Based on these examples, emergency managers will be able to communicate effectively with farmers about causes, impacts, and consequences of disasters affecting livestock in their communities and how to mitigate the effects.

Upon successful completion of the course, you will have a better understanding of issues that arise when disasters affect livestock. You will also be able to rank your susceptibility to hazards, as well as your vulnerabilities to the consequences of disasters. Based on these assessments, you will generate a list of actions you can take to reduce costs as well as human and animal suffering in disasters. Throughout the course, you will learn why self-reliance is essential to effective disaster mitigation.

The course also provides an introduction to emergency planning, which is the basis upon which farmers, emergency managers, veterinarians, extension agents, and others will learn to work together at the level of the farm, local community, and state. Some readers have found it helpful to use this Independent Study course as the basis for small-group emergency planning meetings within their community.

The goal of the course is to provide a comprehensive level of awareness of important issues that arise with livestock in disasters. Some units, such as those on carcass disposal, manure lagoon management, and animal welfare, could each be expanded to entire courses. However, providing in-depth technical information is not the purpose of this course. We hope that the material provided is sufficient to motivate you to address these and other issues as you develop disaster preparedness plans for your farm and your community.

Structure of the Course

Many disasters, such as hurricanes, earthquakes, and blizzards, cannot be prevented. Also, many disasters have similar consequences, such as animal escapes, need for carcass disposal, and negative environmental impact.

Mitigation involves measures that prevent or reduce the causes, impacts, and consequences of disasters. Because most disasters have similar consequences, an “all-hazards” approach to mitigation is taken throughout the course. By taking an “all-hazards” approach, we place the greatest emphasis on consequence management, i.e., on mitigating consequences common to many disasters.

Each unit in this course will describe a common cause of disaster (hazard) and a common consequence of that disaster. To remind you that the vulnerability to a particular consequence can arise from many disasters, not just the hazard in a particular unit, each unit also includes a table listing how the same hazard could result in consequences discussed in other units of the course.

Course Overview

During the design of the course, we gave considerable thought to how to address the many types of livestock and farms. Because it was not possible to have separate courses for each species or type of farm, we consolidated common features of the livestock industry. As you read the course, remember that the hazards and the consequences described for one type of farm or species also apply to many others.

For this course, we have defined livestock as cattle, swine, horses, sheep, and poultry. However, we have also included examples involving emus, circus animals, and feed mills.

The course consists of this overview, sixteen units of instruction, a tool to rank your vulnerability to hazards and consequences of disasters, and a final exam.

Units 2 through 4: Introduction and background. These units describe the importance of livestock agriculture to the U.S., the vulnerability of U.S. livestock agriculture to disasters, and the impact of disasters on livestock producers, rural communities, and markets. Also, these units describe important definitions used by emergency managers.

Units 5 through 15: Common hazards and typical consequences of disasters. Each unit discusses a common hazard that can lead to disaster; typical consequences of the disaster and information on how to mitigate, prepare, and respond to the hazards and consequences. At the end of each unit, you will conduct a vulnerability assessment for the hazard and consequence described, which will assist you in creating an action list for future activities.

Units 16 and 17: Disaster response. These units contain information on local, state, and federal roles in responding to a disaster. They also provide an overview of the principles of planning and responsibilities for developing a local disaster plan. In Unit 16, farm owners will rank their vulnerabilities to hazards and consequences of disasters, which will allow them to prioritize their approaches to mitigation.

Unit 18: Final examination. By completing this unit and passing the exam, you will receive a certificate of completion from the Emergency Management Institute.

How to Complete the Course

You will remember the material best if you do not rush through it. Take a break at the end of each unit and give yourself time to think about the material. Once you feel familiar enough with the material, take the quiz at the end of the unit. The answers to the quizzes are provided on the page following the quiz. At the end of the course is a final examination.

The purpose of the final examination is to ensure that you have a comprehensive understanding of the materials. An answer sheet is supplied with the course materials. Mail the completed answer sheet to the address on the form. Your test will be evaluated and results will be mailed to you within a few weeks. If your score is 75 percent or above, a certificate of completion will be mailed to you.

Interested students who have successfully completed the course and passed the final examination may apply for one semester hour of college credit through the FEMA Independent Study Program Office. Information on taking this course for college credit is available at <http://www.fema.gov/emi/cc.htm>.

Assessing Your Risks

The following are some questions to get you thinking about how much you know about disaster preparedness before you take this course. When you have completed this course, you should review these questions to reflect on how much you have learned.

- How many of your animals, production, or sales could you afford to lose to a disaster and remain viable as a business?
- If a large-scale disaster occurred in your community, how would that affect your county's revenue?
- If you are a livestock producer or farmer, have you ever met with your local emergency manager to discuss the types of resources available to you in disasters?
- If you are an emergency manager, have you ever met with members of the local livestock industry, including livestock producers, veterinarians, and extension agents to discuss likely problems that would arise in common disasters in your community?