Human-Animal-Ecosystem interaction during a natural disaster

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FVE Conference on Natural Disasters and “One - Health”. Are we prepared to react?
Brussels, 16 – 17 April 2015
A **serious disruption** of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which **exceeds the ability** of the affected community or society to cope using its own resources.

Definition from the United Nations Office for Disaster Risk Reduction
Natural
- Avalanche
- Drought
- Earthquake
- Epidemic
- Flood
- Hurricane
- Landslide
- Severe storm
- Tsunami
- Volcanic eruption
- Wildland or urban fire

Technological
- Dam/levee failure
- Hazardous Material release
- Nuclear Accidents
- Power failure
- Transport
  - Airplane crash
  - Train derailment
- Urban conflagration

Human caused
- Civil unrest
- Cyber Events
- Sabotage
- Terrorist acts
- War-related disasters

Sample Hazards List, adapted from
FEMA, Comprehensive Preparedness Guide (CPG) 101 Version 2.0, November 2010
Avalanche
Drought
Earthquake
Epidemic
Flood
Landslide
Hurricane

- Hurricane Wilma
  October 21, 2005

- Photo from U.S. national and Oceanic Atmospheric Administration (NOAA)
Severe storm
Tsunami
Volcanic eruption
Wildfire
Worldwide occurrence

Share of occurrence of natural disasters by disaster type (1994-2013)

- **Flood**: 2,937 occurrences, 43%
- **Storm**: 1,942 occurrences, 28%
- **Earthquake**: 552 occurrences, 8%
- **Extreme temperature**: 381 occurrences, 6%
- **Landslide**: 369 occurrences, 5%
- **Drought**: 322 occurrences, 5%
- **Wildfire**: 255 occurrences, 4%
- **Volcanic activity**: 105 occurrences, 1%

In Europe

Trend in number of reported natural disasters per disaster type in EU: 1980-2009

Flood occurrence by sub-national administrative unit in EU: 2000-2009

Source: Center for Research on the Epidemiology of Disasters (CRED) “CRED Crunch Issue No 22” November 2010
L’Aquila 2009 - Seismic sequence

Sequenza sismica aggiornata al
Seismic sequence updated to
Aug 25, 2009 18:00 CET

Localizzazioni aggiornate alle
Earthquakes locations updated to
16:00 UT

Magnitudo Richter (MI)
Richter Magnitude

- 2 <= MI < 3.0
- 3 <= MI < 4
- 4 <= MI < 5
- MI >= 5

Andamento della sequenza
Temporal evolution

- Apr 6, 2009 03:32 CET - Aug 22, 2009
- Aug 23, 2009
- Aug 24, 2009
- Aug 25, 2009
Areas of intervention

• **Health and Welfare of pets**
  - to address the critical issues and the needs for the management of pet animals populations located in the areas affected and in shelters

• **Health and Welfare of Livestock**
  - to address the critical issues and the needs for the management of farm animals populations located in the areas affected

• **Food safety**
  - to address the food safety issues related to catering in the different places set up to accommodate population (emergency shelters and reception facilities).
Health and Welfare of pets: concerns

- Census of the animals present
  - Micro-chipping of unregistered animals
- Veterinary assistance of owned animals
  - Antiparasitic treatments
- Collection and assistance of abandoned, free roaming, stray dogs and cats
- Public awareness campaigns on the concepts of responsible ownership
- Publication and distribution of information on the correct housing of pets in the emergency shelters.
Health and Welfare of Livestock: concerns

- Census of farm animals
  - In coordination with the national livestock register e-database
- Availability and suitability of animal shelters
- Veterinary assistance in collapsed sheds
- Injured animals treatment, slaughtering or euthanasia
- Carcass disposal
- Animal identification & relocation or movement
- Owner/keeper direct involvement
- Feed, water and bedding availability and duration
- Stockmanship (milking, weaning)
  - Suitability of milking and milk storage equipment
Food Hygiene: concerns

- Census of the emergency shelters
  - Kitchens and food deposits
- Production of information and training material for people and operators
  - Training of emergency shelter kitchen staff
- Surveillance plan for emergency shelter food production and serving areas
  - To monitor the application of guidelines on Good Hygiene Practices in:
    - Shelter’s kitchens
    - Temporary mobile shops and catering facilities
Food Hygiene: concerns

• To check food of animal origin and send to destruction the food unsuitable for consumption
• To check the drinkability of the water in the emergency shelters and in production plants
• To collaborate with human health services in prevention, diagnosis and control of foodborne outbreaks;
To implement an information system for the management and sharing of the information collected.
Knowledge of the Territory

Localization (GPS)

- Farms
- Slaughterhouses
- Control posts
- Markets
- Petshops
- Kennels, shelters

\textit{i.e.} seismic risk assessment
Emergency management

Comprehensive: encompasses all hazards, including programs for:

1. Prevention
2. Preparedness
3. Response
4. Recovery

Integrated: ensures the effort of governments, all relevant organisations and the community are coordinated.

Multidisciplinary Approach
Are we prepared?

- Effective preparedness is a critical precondition for successful response
  - Planning
  - Organising
  - Training
  - Equipping
  - Exercising
  - Applying lessons learned!!

“Fortune favors the prepared mind”
Louis Pasteur