

## ANIMAL HEALTH IN THE LIGHT OF NATURAL DISASTERS AND BIOTERRORISM

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**Summary:** *Disasters of all types have profound impacts on human and animal health, economy and trade, and societies. Animals and animal-related issues are increasingly part of disaster management and risk reduction due to their economic, health and welfare, and social aspects. The OIE has taken a leadership role to identify the current state of disaster management and risk reduction processes and capacities by Veterinary Services of Member Countries and initiated a programme to provide guidelines and standards in the arena.*

*During the 81st OIE General Session held in Paris in May 2013, the OIE Regional Commission for Europe adopted 'Animal health in the light of natural disasters and bioterrorism' as the Technical Item 1 (with questionnaire) to be presented during the 26th Conference of the OIE Regional Commission to be held in Berne, Switzerland, from 22 to 26 September 2014. The OIE Regional Commission for Europe survey on Animal Health and Welfare in Natural Disasters and Bioterrorism resulted in 48 of 53 Member Countries of the Region responding. This high response rate indicates the high level of interest in this topic by the members. There was a wide range of responses across multiple areas including legislation, disaster management and bioterrorism authorities, disaster and bioterrorism experience, effectiveness of response, disaster and bioterrorism capacity, use of guideline and standards, scope of animals covered, integration of stakeholders, lessons learned analysis, resourcing, and other key elements of effective disaster management and risk reduction. The variability of responses indicates the incomplete integration of Veterinary Services into many national and regional preparedness and response networks in facing natural disasters and bioterrorism. In addition it demonstrates an inconsistent capacity to prepare for and respond to disasters and bioterrorism events and highlights the need for guidelines and standards, training and education, informational resources, and collaborative efforts. The vast majority of responders (94%) indicated the desire for OIE to provide actions that would support Competent Authorities and Veterinary Services for their country with the greatest emphasis on guidelines through the OIE Terrestrial Animal Health Code, education and training programmes, and technical support activities.*

**Keywords:** *animal health – animal welfare – bioterrorism – Europe – natural disaster – World Organisation for Animal Health (OIE)*

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## 1. Introduction

During the 81st OIE General Session held in Paris in May 2013, the OIE Regional Commission for Europe adopted 'Animal health in the light of natural disasters and bioterrorism' as the Technical Item 1 (with questionnaire) to be presented during the 26th Conference of the OIE Regional Commission for Europe to be held in Berne, Switzerland, from 22 to 26 September 2014. This report will cover the background of animal health and welfare in the light of natural disasters and bioterrorism with a focus on current status of Member Countries and Veterinary Services across the domains of the Technical Item 1 questionnaire and responses provided. A discussion on the results of the questionnaire is provided, including recommendations based on observations from the results.

## 2. Overview

Global disasters have extraordinary impact on animal and human health, economies and societies. In 2012, the Centre for Research on the Epidemiology of Disasters (CRED) reported 552 natural and technical disasters (not including wars, conflict-related famines, diseases or epidemics) resulted in nearly 140 million people directly affected at a cost of USD 157 billion<sup>1</sup>. Natural and man-made/technological disasters require a multidisciplinary engagement to achieve optimal efficiency and effectiveness in planning, mitigation, response and recovery. The OIE has an initiative to examine the current state of risk reduction and disaster management for animal health and welfare in disasters and develop guidelines and standards with the goal of enhancing resilience and strengthening disaster management and risk reduction capacity within Member Countries.

Recent events such as the WHO-declared global influenza pandemic, transboundary disease incursion, the Gulf of Mexico oil spill, local and regional conflict, the Haiti earthquake with subsequent cholera outbreak, Japan's earthquake/tsunami/radiological disaster, European floods, African droughts, global warming, and other events highlight the need to bring all components of disaster management and risk reduction together in a cohesive programme with veterinarians and animal experts playing a critical role.

By developing guidance and standards, the OIE enhances the integration of animal disaster management and risk reduction into broader national and regional networks, promotes the health and welfare of animals, safeguards human health, and helps Member Countries prepare for and mitigate disaster effects and restore economic and societal conditions when a disaster strikes.

The OIE has a well-recognised leadership role in protecting the world against biological disasters, whether of natural or man-made origin, through its work in the elaboration of standards for diagnosis, early detection, reporting and control of animal diseases and zoonoses. However, natural and man-made/technological disasters impacting animal health and welfare and veterinary public health are not specifically addressed in OIE standards or guidelines and are not specifically included in the OIE Tool for the Evaluation of Performance of Veterinary Services (PVS Tool). The success of the OIE in risk reduction in biological disasters and the OIE frameworks for endemic and transboundary disease control planning and response can be used as a foundation to build prepared and resilient nations in regard to animal-related disasters. An outstanding example of OIE activities in risk reduction is the global eradication of rinderpest. There is no international group that has taken the leadership in the animal-related disaster management and risk reduction and, as a whole, the veterinary profession lags behind other professional groups such as medicine and public health in addressing disaster issues. OIE is uniquely poised to take the global leadership role in this arena to support their Member Countries.

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1 World Disaster Report 2013, available at: [www.ifrc.org/PageFiles/134658/WDR\\_2013\\_complete.pdf](http://www.ifrc.org/PageFiles/134658/WDR_2013_complete.pdf)

### 3. Questionnaire

In order to evaluate the capacity of the Veterinary Services of the Member Countries of Europe Region to prepare for and respond to disasters and bioterrorism events, a questionnaire was sent to the 53 Members of the Region. There were 48 responses out of 53 countries queried; this is the highest response rate from this OIE region on a questionnaire related to a Technical Item to be presented in a Conference of the OIE Regional Commission for Europe.

The results of the questionnaire are provided in table form with both the numbers reported and the percentage of responses tabulated (see [Appendix 1](#)).

### 4. Discussion

The high number of responses to the questionnaire indicates the strong interest in the topic by the OIE Regional Commission for Europe Member Countries. The variability in the range of responses, including multiple gaps, indicates the need for additional work required by countries and organisations to develop effective and efficient disaster management and risk reduction programmes. There are significant gaps in incorporation of animal health and welfare issues in National Legislation and National Disaster Response Plans. The designation of legal responsibility to a Competent Authority is lacking or incomplete for a number of countries. In addition, there are a wide range of Competent Authorities identified as the lead for disaster response including animal issues. OIE has experience and capability to assist in developing National Legislation for animal health and welfare and could leverage this capability to support Member Countries with animal health, animal welfare and veterinary public health in National Disaster Management Plans.

Where National Disaster Plans included animals there was a wide range of animal categories covered. Livestock and production animals were universally included (100%), but other animal categories are represented only in 44–64% of plans. It is important for Veterinary Services and Competent Authorities to determine all species that are covered under their National Plans and identify which country entity has the responsibility for them. In many cases, Veterinary Services represent the only nationally organised veterinary capability within a country and even if not legally directed to respond to these species in disasters, the expectation may be that they would or should be able to perform animal planning and response activities. For all animal species and all hazards covered contingency plans should be developed.

Disaster management and risk reduction in animal health and welfare is a multifunctional responsibility with multiple stakeholders. The results of the survey indicate that there are significant gaps in identification and recognition of these stakeholders and their contributions. The survey range of additional stakeholder support ranges from 19% to 69%. With the exception of external non-governmental organisation support, which is variable in disasters, these numbers should approach 100%. Veterinary Services and Competent Authorities need to conduct stakeholder analysis and build strategic stakeholder partnerships to strengthen resilience and plan for and respond to animal-related disaster events. OIE could assist by providing stakeholder analysis training and education in disaster management and risk reduction programmes.

There was limited awareness of the Livestock Emergency Guideline Standards (LEGS) and very limited training or utilisation of these guidelines. These standards are more commonly recognised and utilised in other OIE regions such as Africa and Asia, however they provide an outstanding platform to train personnel for a variety of disaster management and risk reduction scenarios.

Only 40% of responding countries indicated the use of guidelines, standards, handbooks, or other references in their disaster management and risk reduction. This very low number calls for the need to develop, train for, and deploy guidelines and standards to support Member Countries. Without standardized terminology, reporting, operational procedures and other aspects of disaster management and risk reduction, it is extremely difficult to plan and execute effective programmes. The OIE is well positioned to take a leadership role in this area with long-time experience in standards and guidelines. It has taken the initial steps to address this issue through the establishment of an *ad hoc* Group on Disaster Management and Risk Reduction in Relation to Animal Health and Welfare and Veterinary Public Health and the development of a draft guideline to be evaluated in the 2014–2015 timeframe.

Slightly fewer than 50% of responses indicated experience with a recent disaster. This number may be low due to the inexact wording of what was included in the term 'recent'. In addition, the narrower definition of disasters in the questionnaire, which focused on natural disasters and bioterrorism, did not cover many of the events countries may have dealt with recently. If disasters had been defined more broadly in time and scope, including all hazards such as epidemics and conflicts, the number would likely have been higher. For example, nearly every Member Country would have been involved at some level with the WHO-declared Avian Influenza Pandemic with its concomitant animal and human health issues and many have dealt with some level of conflict. Of the disasters noted, floods were by far the most common being cited in over 80% of those reporting recent experience.

Veterinary Services are highly encouraged to utilise an all-hazards approach to disasters and broaden their scope of awareness for planning and response. In those countries indicating recent disaster experience, 95% incorporated animal health and welfare issues into the response. The effectiveness of response was generally reported to be good to excellent. However the evaluation of disaster response using After-Action Reports and Lessons Learned Analysis was severely lacking with over 40% doing no evaluation, 50% doing evaluation but not having publically releasable information, and only 9% having publically available reports. Where appropriate, After-Action Reports and Lessons Learned Analysis should be conducted with each disaster and shared with OIE Member Countries in order to establish a database of information and inform the development of disaster management and risk reduction programmes and best practice guidelines in animal-related events. This information sharing is essential in building the body of professional knowledge that will move veterinary disaster management and risk reduction forward. The need for this across all domains was articulated by Margareta Wahlström, United Nations Special Representative of the Secretary-General for Disaster Risk Reduction, who stated that "Access to information is critical to successful disaster risk management. You cannot manage what you cannot measure."<sup>1</sup>

Animal directed or affected bioterrorism presents a unique facet of disaster management and risk reduction that brings in multiple local, national, and regional jurisdictions. Nearly 80% of respondents indicated the legal responsibility to investigate these events. A smaller number, 73%, indicated they possessed the necessary capabilities for response. Seven countries indicated they had the authority and/or responsibility to investigate animal-related bioterrorism events, but lacked the capacity. Three countries identified the capacity to investigate animal-related bioterrorism events, but lacked the authority. This authority/capability gap should be evaluated where it exists and plans to bridge the gap should be developed. Forensics capability and attribution are critical in bioterrorism events. These capabilities are highly technical, expensive to maintain, and require trained personnel. This area would be an excellent one to develop regional capabilities and establish mutual support agreements. External funding agents including the World Bank and the United States Department of Defense Threat Reduction Agency could be considered for training and resourcing.

The vast majority (94%) of responding countries indicated that there were actions and activities by the OIE that would assist in planning and responding to animal health and welfare in natural disaster and bioterrorism events. The highest mentioned activity (71%) was to provide guidance through standards in the *Terrestrial Animal Health Code*. It was interesting to note that while 71% of respondents sought guidance through standards, only 35% recommended including these in PVS evaluations. Training was requested in multiple formats including regional workshops (69%), online training (65%), tabletop exercises (50%), veterinary curriculum incorporation (40%) and planning assistance teams (33%). In addition, over 50% supported the establishment of OIE Collaborating Centres and the OIE convening a global summit on animals in disasters and bioterrorism. These high levels of response give a clear mandate for the OIE to continue their leadership initiatives to develop programmes to strengthen Member Countries improving their capacity to plan for and respond to animal-related disaster events in animal health, animal welfare, and veterinary public health. Priorities must be established, strategic partnerships need to be developed, resources identified and an integrated OIE disaster programme should be part of the OIE strategic plan.

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1 [www.unisdr.org/we/inform/disaster-statistics](http://www.unisdr.org/we/inform/disaster-statistics)

## References

Relevant issues of the OIE *Scientific and Technical Review* include:

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2. World Organisation for Animal Health (2006). – Biological disasters of animal origin. The role and preparedness of veterinary and public health services (Hugh-Jones M., édit.) *Rev. sci. tech. Off. int. Epiz.* **25** (1).
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Appendix/...



**Appendix 1****Responses to the questionnaire****Responding countries**

1. Albania	17. Georgia	33. Montenegro
2. Andorra	18. Germany	34. The Netherlands
3. Armenia	19. Greece	35. Norway
4. Austria	20. Hungary	36. Poland
5. Azerbaijan	21. Iceland	37. Portugal
6. Belarus	22. Ireland	38. Romania
7. Belgium	23. Israel	39. Russia
8. Bosnia and Herzegovina	24. Italy	40. Serbia
9. Bulgaria	25. Kazakhstan	41. Slovakia
10. Croatia	26. Latvia	42. Slovenia
11. Cyprus	27. Liechtenstein	43. Spain
12. Czech Republic	28. Lithuania	44. Sweden
13. Denmark	29. Luxembourg	45. Switzerland
14. Estonia	30. Former Yug. Rep. of Macedonia	46. Tajikistan
15. Finland	31. Malta	47. Ukraine
16. France	32. Moldavia	48. United Kingdom.

Respondents	Number
Delegates	12
Not Delegate, Focal Point	22
Not Delegate or Focal Point	14

Focal Point represented	Number
Animal disease notification to the OIE	13
Wildlife	5
Communication	5
Aquatic animals	4
Animal welfare	3
Veterinary laboratories	1
Unspecified	3

(Some reporting multiple Focal Points)

☞ All percentages rounded to whole numbers and represent percent of total responses including responses of 'No'.

1. Is 'animal health and welfare in disaster events' incorporated into your national legislation?

	Number	Percentage
Yes	38	79%
No	8	17%
No answer	1	2%
Yes/No	1	2%

2. Is there a Competent Authority that has the legal responsibility to provide for ‘animal health and welfare in disaster events’?

	Number	Percentage
Yes	42	88%
No	1	2%
Limited	5	10%

- 2.1 If yes, what is the Competent Authority?

Competent Authority	Reported
National/State Food and Veterinary Service	14
National Veterinary Service	10
Ministry of Emergency Services	4
Food Safety Authority	3
Ministry of Agriculture-Veterinary Service	3
Ministry/Authority for Interior	3
Board of Agriculture	1
Ministry of Health – DG Animal Health	1
Ministry Agriculture-Rural Development	1
Department of Food, Agriculture, and Marine	1
Department Environment, Food, and Rural Affairs	1
State Emergency Epizootic Commission	1
Ministry Agriculture, Rural Development, Water Administration – Veterinary Service	1
Center-Food Safety, Veterinary Service, Phytosanitary	1

(Competent Authorities cited to closest matching title)

Collaboration with Veterinary Services in the 9 responses providing an answer was rated as ‘Good’ or ‘Excellent’ with 1 response reporting collaboration as ‘Poor’.

3. Is ‘animal health and welfare in disaster events’ incorporated in your National Disaster Management Plans?

	Reported	Percentage
Yes	39	81%
No	9	19%

- 3.1 If so, what species/animal types does it cover?

Animals covered	Reported	Percentage
Livestock/Production Animals	39	100%
Companion Animals	25	64%
Zoo and aquatic animals	25	64%
Laboratory animals	17	44%
Wildlife	20	51%
Others (not specified)	3	7%



4. What other organisations support your country's animal health in natural and man-made disaster events?

Organisations	Reported	Percentage
Internal non-governmental organisations	33	69%
External non-governmental organisations	9	19%
Local animal control and animal regulatory authorities/groups	31	65%
<i>Ad hoc</i> response groups and individuals	27	56%

5. Are you aware of the Livestock Emergency Guideline Standards (LEGS)?

	Reported	Percentage
Yes	19	40%
No	29	60%

- 5.1 If yes, has your country trained in or utilised LEGS for animal focused disasters?

	Reported	Percentage
Yes	6	32%
No	13	68%

6. Does your Competent Authority use another guideline, standard, or handbook to help in animal health in natural and man-made disaster events?

	Reported	Percentage
Yes	19	40%
No	29	60%

- 6.1 If so, which one?

**Regional:** EU Legislation, EU Guideline/National Plan, FAO Guideline

**National:** National Guidelines (2), Federal/National/Civil Defense Law (4), National Disaster/Crisis Management/Contingency Plan (6), Contingency Plans and Operational Manuals

**Local:** Local Developed Plans

7. Has your country/territory had experience with a recent natural disaster?

	Reported	Percentage
Yes	23	48%
No	25	52%

- 7.1 If yes, what was the nature of the disaster?

Recent Disaster Event	Reported	Percentage
Flood	18	82%
Landslide	2	9%
Drought	1	5%
Forest fire	1	5%
Hurricane	1	5%
Earthquake	1	5%
Volcanic eruption	1	5%

7.2 If yes, was animal health and welfare incorporated into the disaster response?

	Reported	Percentage
Yes	22	96%
No	1	4%

7.3 If yes, how effective was the animal health and welfare response?

	Reported	Percentage
Effective – Very Effective	11	50%
Good	4	18%
Acceptable	3	14%
Pending/No answer	4	18%

(Interpretation of 22 responses)

7.4 If yes, is there an after action report or lessons learned analysis available to help establish best practices?

	Reported	Percentage
Yes	2	10%
Yes, not publicly available	11	52%
No	9	43%

8. Does your Competent Authority have the legal responsibility to investigate or support investigation by a National Authority of an animal directed bioterrorism event?

	Reported	Percentage
Yes	37	77%
No	11	23%

9. Does your Competent Authority have the technical, laboratory, and trained personnel, and additional capacity to investigate or support investigation of an animal-directed bioterrorism event?

	Reported	Percentage
Yes	35	73%
No	13	27%

9.1 If no, what are the major gaps/shortages?

Gap/Shortage	Reported	Percentage
Legal authority	6	18%
Trained personnel	12	35%
Laboratory capacity at appropriate biosecurity level	9	26%
Surveillance system	4	12%
Equipment/supplies including veterinary drugs	8	24%
Reporting authority/capability	2	6%
Forensic and attribution capacity	8	24%
Budget, resources	11	32%
Other	2	6%

10. Are there actions or activities by OIE that would assist the Competent Authority in your country/territory to plan and respond to animal health and welfare in natural disaster and bioterrorism events?

	Reported	Percentage
Yes	45	94%
No	3	6%

10.1 If Yes, what actions or activities would be valued?

Action/Activity	Reported	Percentage
<b>Support for OIE Activities in Disaster Management and Bioterrorism</b>	<b>45</b>	<b>94%</b>
Provide guidance through standards in the <i>Terrestrial Animal Health Code</i>	34	71%
Convene an OIE Global Summit on Animals in Disasters and Bioterrorism	25	52%
Provide assistance for writing Animal Disasters and Bioterrorism legislation	17	35%
Embed Animal Disasters and Bioterrorism assessments into PVS	17	35%
Develop online training programmes for animals in Disasters and animal directed Bioterrorism	31	65%
Develop regional workshop programmes for animals in Disasters and animal directed Bioterrorism	33	69%
Provide Animal Disasters and Bioterrorism Planning Assistance Teams	16	33%
Provide Animals Disasters and Bioterrorism Tabletop Exercises	24	50%
Facilitate incorporation of Animal Disasters and Bioterrorism into veterinary curriculum	19	40%
Facilitate mutual support agreements between countries in the event of natural disaster and bioterrorism events	19	40%
Creation of an OIE Collaborating Centre Animals on this topic	25	52%