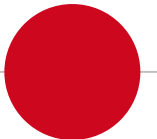


Roundtable on Response Actions to AAD Emergencies

Anna Toffan & Amedeo Manfrin

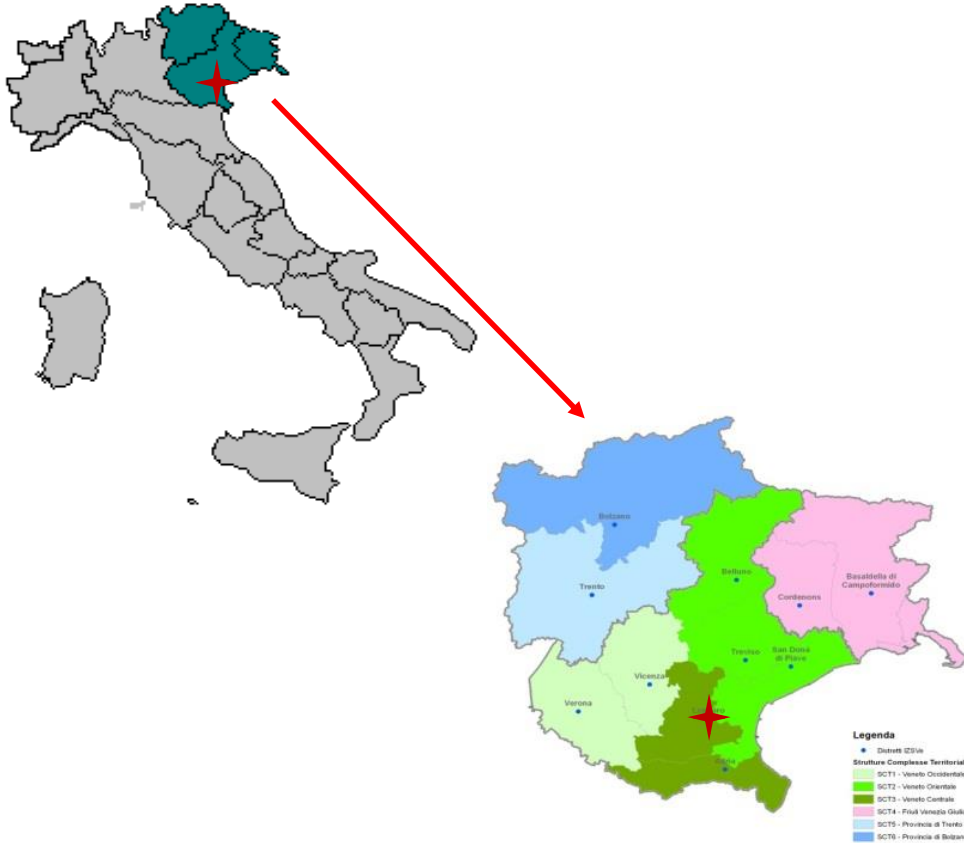
Istituto Zooprofilattico Sperimentale delle Venezie

National reference Laboratory for fish, mollusc and crustacean diseases, Italy



FAO - Rome 16-18 October 2019

● IZSve - who we are



Istituto Zooprofilattico Sperimentale delle Venezie (IZSve) is a public veterinary institute and it is part of II.ZZ.SS. network in Italy.

Veterinary services in Italy are under the **Ministry of Health**

Its current headquarters are at Legnaro (Padua).

It hosts numerous national and international reference laboratories for important animal diseases:

- **National Reference Centre for Fish, Mollusc and Crustacean Diseases**
- **OIE Reference Laboratory for Viral Encephalo-Retinopathy**

What is the role/mandate of your institution and relevant structure in place for dealing with aquatic mass mortality events (MME)

- At a national level IZZSS are the public health authorities deputed to conduct prevention and control in the fields of animal health and food safety
- IZSve as NRC for fish mollusc and crustacean diseases has facilities for :
 - Gross and microscopic pathology, histopathology, bacteriology, virology, molecular biology, electron microscopy
 - Chemical department
 - Epidemiological department
 - Experimental aquarium

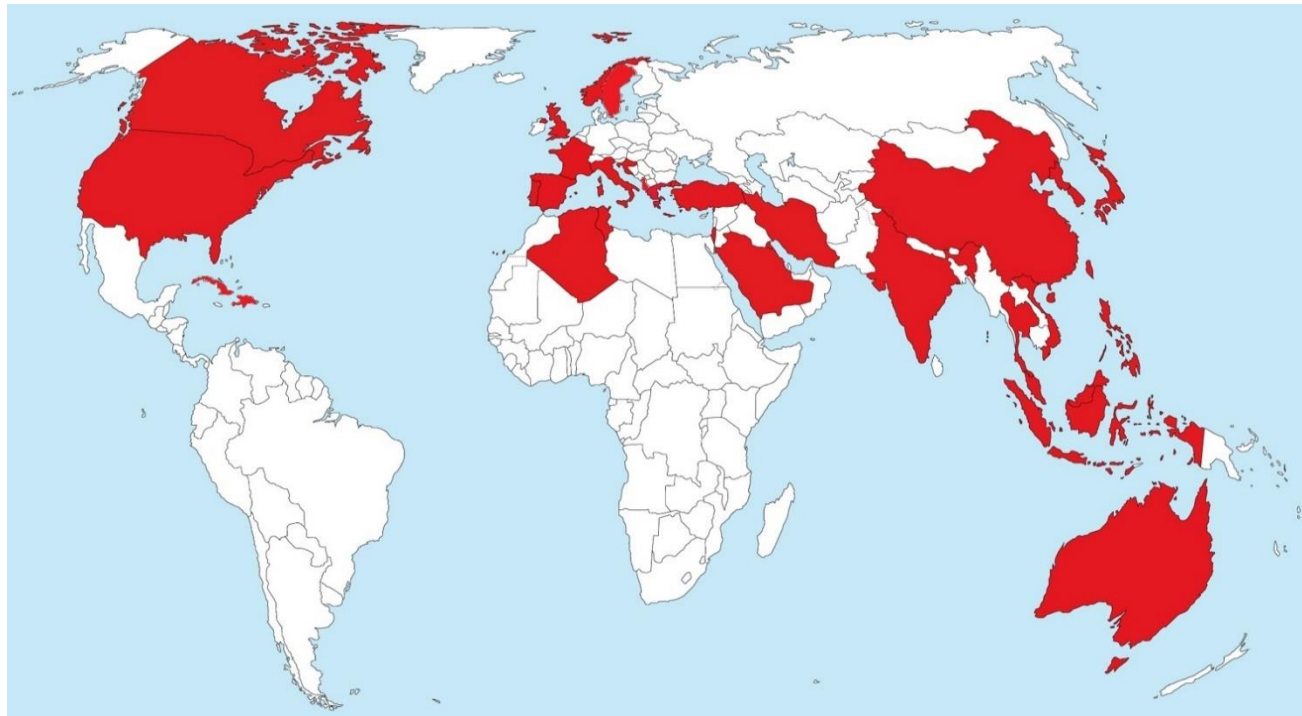


National Reference Center for Fish, Crustacean and Mollusc Diseases: activities

- **Diagnosis and confirmation of diagnosis** of fish, mollusc and crustacean diseases
- **Field surveillance** activities according to national and EU legislation
- Identification and **characterization of virus, bacteria and parasites** related to new and emerging diseases
- Development and **standardization** of diagnostic methods
- **Technical and scientific advices** to veterinarians and fish farmers
- Technical **collaboration** with Ministry of Health, Local and Regional Veterinary Services, environmental authorities, fisherman associations, pharmaceutical companies
- **Research** and training with Universities and other public or private institutes
- **Epidemiological studies**

● Viral Encephalopathy and Retinopathy

- IZSVE since 1999 is the OIE Reference Centre for this disease
- Viral Encephalopathy and Retinopathy (NNV) is NOT an OIE listed disease (Chapter 1.3)
- There is a dedicated chapter in the Manual of Diagnostic Tests for Aquatic Animals
- Widespread disease in marine and freshwater



● Example of an MME that you have been involved. Describe the specific MME scenario - National level

- A surveillance on AAMME analyzed by IZSVE from 2011 to 2016 enlightened that:
- IZSVE investigated 10-20 AA mortality events/year (wild and farmed aquatic animals)
- Scale event is generally low
- No seasonality of the events
- There is no central coordination and no central record of these events

Example of an MME that you have been involved. Describe the specific MME scenario - National level

Aquaculture

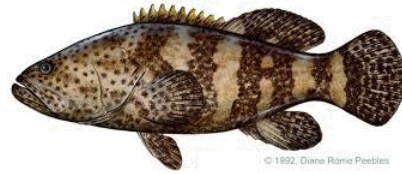
- National and European legislation
- The cause of mortality was identified in the majority of cases
- Samples conferred by owner and/or veterinary services
- Minimal anamnestic information available
- **No emergency funds are available in Italy for control of AAD**

Wild aquatic animals

- The cause of mortality was identified in <30% of cases
- Samples conferred by different stakeholders: fisherman, fireman, police, other public services, local municipality, private citizens
- Differences in sampling protocols
- Samples unsuitable for analysis
- Lack of anamnestic information
- Difficulties in following up and communication of results
- **No emergency funds are available**

● Examples of sanitary emergencies in Italy

- Several CEV and KHV introductions in farmed koi and wild carp (since 2000)
- Introduction of CyHV-2 in wild crucian carp and gold fish since 2012
- NNV in wild grouper (occurring every years by the end of summer)
- Reassortant NNV emergence in sea bream hatchery (from 2014)
- Amoebic Gill Disease (AGD) in farmed rainbow trout from 2015
- Sporadic crayfish plague (*Aphanomyces astaci*) in autoctonous species
- Recurrent mortality outbreaks in Manila clams due to coinfection with *Perkinsus olseni* and *Vibrio* spp. (still under investigation)
- *Haplosporidium pinnae* in pen shell (*Pinna nobilis*)



Example of an MME that you have been involved. Describe the specific MME scenario - International level


- Millions of tons of carp were involved in this MME in 2018-2019
- Samples were shipped to Italy in November 2018 by a FAO consultant
- Diagnosis of KHV and CEV was confirmed in our lab by the end of the 2018 and in January 2019 by CEFAS



Example of an MME that you have been involved. Describe the specific MME scenario - International level

- Communication with local authorities was slow
- There was no local laboratories with experience in fish diseases
- The official confirmation by the OIE Reference Center (CEFAS, UK) was requested by IZSVe
- No follow up

The confirmation of the infectious origin of the event allowed to exclude pollution as the causative agent as initially hypothesized



Transboundary and Emerging Diseases

RAPID COMMUNICATION

First detection of koi herpesvirus and carp oedema virus in Iraq associated with a mass mortality in common carp (*Cyprinus carpio*)

Anna Toffan, Andrea Marsella ✉, Miriam Abbadi, Salah Abass, Basem Al-Adhadh, Gareth Wood, David Michael Stone

First published: 21 November 2019 | <https://doi.org/10.1111/tbed.13428>

In your opinion, what are the 5 minimum emergency preparedness response requirements that need to be in place?

1. Coordination between different entities is crucial. Coordination at central level is advisable (++wild fish)
 2. Identification at national level of a coordination/reference centre on MME
 3. Peculiarities of AA make diagnosis of AAD more difficult than terrestrial animals diseases (i.e. specific media for growing bacteria, specific temperatures, many non-cultivable pathogens, emergence of new pathogen)
 4. Standard sampling protocols
 5. Training of local veterinary services in identifying as soon as possible whether the MME is clearly pathogen related or environmentally related
- Emergency funds need to be considered



Thank you for your attention!

