2011/4

QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

October – December 2011

Published by the

Network of Aquaculture Centres in Asia-Pacific

Suraswadi Building, Department of Fisheries
Kasetsart University Campus, Ladyao, Jatujak
Bangkok 10900, Thailand

Food and Agriculture Organization of the United Nations

Viale delle Terme di Caracalla
Rome 00100
Italy

April 2012

Network of Aquaculture Centres in Asia-Pacific and Food and Agriculture Organization of the United Nations. Apr. 2012. *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region)*, 2011/4, October – December 2011. NACA: Bangkok, Thailand.

Contents

Foreword

Emerging Aquatic Animal Diseases in the Region

The Asia-Pacific region, being the top producer of aquaculture products in the world, is continuously beset by emerging aquatic animal disease problems causing high mortalities and economic losses among small farmers and commercial producers. Recently, two emerging diseases have been reported: early mortality syndrome (EMS) in shrimps (also known acute hepatopancreatic degenerative necrosis syndrome or AHDNS); and scale-drop syndrome (SDS) in Asian seabass (*Lates calcalifer*). Aside from these, the threat of infectious myonecrosis (IMN) currently affecting *Penaeus vannamei* in Indonesia cannot be ruled out, as *P. vannamei* is popularly cultured among many countries in the region.

EMS/AHDNS is a new disease causing significant losses in grow-out culture of *P. vanammei* and *P. monodon* in Vietnam. It was also reported in China, Malaysia and eastern part of the Gulf of Thailand (NACA-FAO 2011; Lightner et al. 2012; Panakorn 2012). It Vietnam where significant losses were reported since March 2011, shrimps cultured intensively or semi-intensively experienced mass mortalities (up to 100%) due to outbreaks of this disease during 20-30 days post stocking. Clinical signs observed include slow growth, corkscrew swimming, loose shells, as well as pale coloration. The primary pathogen (considering the disease is infectious) has not been identified, while the presence of some microbes including *Vibrio*, microsporidians and nematode was observed in some samples. Lightner et al. (2012) described the pathological and etiological details of this disease. Histological examination showed that the effects of EMS in both *P. monodon* and *P. vannamei* appear to be limited to the hepatopancreas (hp) and show the following features:

1) Lack of mitotic activity in generative E cells of the HP
2) Medial to central dysfunction of hepatopancreatic B, F and R cells
3) Prominent karyomegaly and massive sloughing of medial to central HP tubule epithelial cells
4) Terminal stages including massive intertubular hemocytic aggregation followed by secondary bacterial infections

The progressive dysfunction of the hp results from lesions that reflect degeneration and dysfunction of the tubule epithelial cells that progress from proximal to distal. This degenerative pathoglogy of hp is highly suggestive of a toxic etiology. So far no potential causative pathogen has been found and possible etiologies include toxins (biotic or abiotic), bacteria and viruses (NACA-FAO 2011).

SDS on the other hand, has been previously described many years go, but is often masked by concurrent parasite and marine flexibacter (*Tenacibaculum maritimum*) infection. The disease causes chronic mortalities in affected seabass farms, usually affecting 100-300 g fish cultured in marine cages (more than 3-4 months post-stocking) and causing cumulative mortality of 40-50%. The first pathological description of this disease was made by Gibson-Kueh et al (2012) as follows:

- Severely affected fish stopped feeding and schooling, and occasionally showed abnormal nervous behavior characterized by spiral swimming.
- Gross pathological features include darkened bodies, scale loss over extensive areas with loss of skin color, tail/fin erosion, pallor of gills, focal to extensive areas of hepatic lipidosis, petechial to ecchymotic haemorrhage in liver, kidney and spleen, splenomegaly or atrophied shrunken spleen and renomegaly.
- The most distinctive histopathological feature of SDS was the vasculities in all major organs and associated tissue degeneration, haemorrhage and necrosis of varying severity.
- The dermis overlying scale beds was often necrotic, corresponding to areas with loss of scales and skin colour. Necrosis of splenic ellipsoids, renal glomeruli and choroid rete glands of eye were further hallmarks of the disease with systemic vascular involvement.
- Transmission electron micrographs show two morphological forms of virions: single and double-enveloped hexagonal virions, which resemble iridovirus or herpesvirus.

The cause of SDS is still unknown but the pathological changes, especially the vasculitis, suggest an infectious etiology, possibly viral.

References:

Gibson-Kueh, S, Chee, D, Chen, J, Wang, YH, Tay, S, Leong, LN, Ng, ML, Jones, JB, Nicholls, PK, Fergusson, HW. 2012. The pathoglogy of 'scale drop syndrome' in Asian seabass, Lates calcarifer Bloch, a first description. Journal of Fish Diseases 35:19-27.

Lightner, DV, Redman, RM, Pantoja, CR, Noble, BI, Tran, L. 2012. Early mortality syndrome affects shrimp in Asia. Global Aquaculture Advocate, January/February 2012:40.

NACA-FAO 2011. Quarterly Aquatic Animal Disease report (Asia and Pacific Region), 2011/2, April-June 2011. NACA, Bangkok, Thailand.

Panakorn, S. 2012. Opinion article: more on early mortality syndrome in shrimp. Aqua Culture Asia Pacific, Volume 8 No. 1: 8-10.

Reports Received by the NACA Secretariat

Country: AUSTRALIA Period: October - December 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	-(2011)	-(2011)	-(2011)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	+	+	-(2011)	II	2
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-(2011)	-(2011)	-(2011)		3
10.Enteric septicaemia of catfish	-(2011)	-(2011)	-(2011)		4
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	-(2011)	-(2011)	-(2011)		5
3. Infection with abalone herpes-like virus	-(2011)	+	+	III	6
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	-(2008)	-(2008)	-(2008)		7
5. Infectious myonecrosis	0000	0000	0000		
6. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		8
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		9
2. Infection with *Batrachochytrium dendrobatidis*	-(2011)	-(2011)	-(2011)		10
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Epizootic haematopoietic necrosis was not reported this period in the Australian Capital Territory, but diagnostic testing completed confirmed occurrences in 4th quarter 2010 and 1st quarter 2011. Not reported this period despite passive surveillance, but is known to have occurred previously in New South Wales (last year reported 2009), Victoria (last year reported 2004) and South Australia (last year reported 1992). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in the Northern Territory, Queensland and Western Australia.
2	**Epizootic ulcerative syndrome** 1. **Reported in NSW** in October 2011. Passive surveillance; 2. **Species affecred-** multiple species including Australian bass (*Macquaria novemaculeata*) and sea mullet (*Mugil cephalus*); 3. **Clinical signs-** information not available; 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** 9 fish; 6. **Economic loss-** information not available; 7. **Geographic extent-** Lower Hunter River; 8. **Containment measures-** not applicable – EUS is considered to be endemic in a number of coastal catchments in New South Wales; 9. **Laboratory confirmation-** Histopathological diagnois of Aphanomyces infection in two fish (an Australian bass and a sea mullet) of nine fish submitted to the laboratory for examination; 10. **Publications-** None.

2	**Epizootic ulcerative syndrome (Cntd…)** 1. **Reported in NSW** in November 2011. Passive surveillance; 2. **Species affecred-** Golden perch (*Macquara ambigua*); 3. **Clinical signs** – information not available; 4. **Pathogen** – *Aphanomyces invadans*; 5. **Mortality rate** – 2 fish 6. **Economic loss** – information not available; 7. **Geographical extent** – Murray River (November); 8. **Containment measures** – Not applicable; 9. **Laboratory confirmation** – Histopathological diagnois of Aphanomyces infection in two fish submitted to the laboratory for examination; 10. **Publications** – None. 1. **Reported in Qld** in November 2011, Passive surveillance; 2. **Species affected** – Adult sand whiting (*Sillago ciliata*); 3. **Clinical signs** – Deep ulcerative skin lesions, extensive granulomas of various sizes throughout necrotic muscle; 4. **Pathogen** – *Aphanomyces invadans*; 5. **Mortality rate** – 1 fish; 6. **Economic loss** – information not available; 7. **Geographical extent** – Kolan River, Bundaberg; 8. **Containment measures** – Not applicable; 9. **Laboratory confirmation** – Histopathology – typical granulomatous nodules containing GMS-positive fungal hyphae; 10. **Publications** – None. Epizootic ulcerative syndrome was reported during this period in Queensland (November) and New South Wales (October and November). It is known to have occured previously in the Northern Territory (last reported 2nd quarter 2011), South Australia (last year reported 2008), Victoria (last year reported 2010) and Western Australia (last year reported 2009). Passivesurveillance and never reported in Tasmania. No information available in the Autralian Capital Territory.
3	**Viral encephalopathy and retinopathy** was not reported this period despite passive surveillance, but is known to have occurred previously in Queensland and the Northern Territory (last reported 2nd quarter 2011), New South Wales (last year reported 2010), Western Australia (last year reported 2005) and Tasmania (last year reported 2000). Not reported this period, but is known to have occurred previously in South Australia (last year reported 2010). Never reported from Victoria despite passive surveillance. No information available this period in the Australian Capital Territory.
4	**Enteric septicaemia of catfish** was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last reported 3rd quarter 2011), in Queensland (last year reported 2008) and Tasmania (last year reported 2001). Never reported in New South Wales, South Australia, Victoria and Western Australia despite passive surveillance. No information available this period in the Australian Capital Territory.

5	**Infection with *Perkinsus olseni*** was not reported this period despite passive surveillance but is known to have occurred previously in South Australia (last reported 1st quarter 2011), New South Wales (last year reported 2005) and Western Australia (last year reported 2003). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Victoria. No information available this period in the Australian Capital Territory (no marine water responsibility).
6	**Infection with abalone herpes-like virus (abalone viral ganglioneuritis)** 1. **Reported in Tasmania** in November/December 2011. Passive surveillance; 2. **Species affecred-** Greenlip abalone (*Haliotis laevigata*) and blacklip abalone (*Haliotis rubra*); 3. **Clinical signs** – Greenlip abalone displayed clinical signs at diagnosis, blacklip abalone were diagnose with subclinical infection; 4. **Pathogen** – Abalone herpes-like virus; 5. **Mortality rate** – Information not available; 6. **Economic loss** – information not available**;** 7. **Geographical extent** – Single clised circuit live-holding facility; 8. **Containment measures** – Tracing and restriction of stock movements, destocking and decontamination; 9. **Laboratory confirmation** – AVG was confirmed by histopathology and PCR in affected greenlip abalone. Clinically normal blacklip abalone cohabiting with greenlip abalone tested positive for the virus using PCR; 10. **Publications** – None 1. **Reported in NSW** in December 2011, Passive surveillance; 2. **Species affected** – *Haliotis laevigata, Haliotis rubra*; 3. **Clinical signs** – Mortalities followed typical AVG clinical signs; 4. **Pathogen** – Abalone herpes-like virus; 5. **Mortality rate** – 10-20%; 6. **Economic loss** – Information not available; 7. **Geographical extent** – Multiple wholesale and retail seafood outlets (a total of approximately 50) in metropolitan Sydney, no infection in wild abalone; 8. **Containment measures** – Destocking and decontamination; 9. **Laboratory confirmation** – Real time PCR and histopathology; 10. **Publications** – None Infection with abalone herpes-like virus (abalone viral ganglioneuritis) was reported this period in New South Wales (December) in live abalone that were imported for human consumption from the affected Tasmanian facility. Not reported this quarter despite passive surveillance but is known to have occurred previously in Victoria (last year reported 2010). Active surveillance and never reported in South Australia. Passive surveillance and never reported in Queensland and Western Australia. No information available this period in the Australian Capital Territory (no marine water responsibility) and Northern Territory.
7	**Infectious hypodermal and haematopoietic necrosis virus** was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008) and Northern Territory (last year reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available in Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present).
8	**White tail disease** was not reported this period from Queensland despite passive surveillance (last year reported 2008). Passive surveillance and never reported from New South Wales and South Australia. No information available this period in the Australian Capital Territory, Northern Territory, Tasmania, Victoria and Western Australia.

9	**Infection with ranavirus** was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last year occurred 2008, prior to official reporting). Suspected but not confirmed despite passive surveillance in Queensland. Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory, New South Wales, South Australia, Victoria and Western Australia.
10	**Infection with *Batrachochytrium dendrobatidis*** was not reported this period but is known to have occurred previously in Victoria (last reported 1st quarter 2011) and Tasmania (last reported 2010). Not reported this period despite passive surveillance in Queensland. No information available this period in the Australian Capital Territory, South Australia, New South Wales and Northern Territory.

2. New aquatic animal health regulations introduced within past six months (with effective date):

Changes were made to Australia's *National List of Reportable Diseases of Aquatic Animals* (National List) in October 2011 (AHC-20). Three diseases were added to the National List: Necrotising hepatopancreatitis; Ostreid herpesvirus-1 µ variant (OsHV-1 µvar); and ISKNV (infectious spleen and kidney necrosis virus)-like viruses of finfish.

ISKNV-like viruses are a group of viral agents in the genus *Megalocytivirus*, family Iridoviridae, and are defined on page 7 of:

> Biosecurity Australia (2010) "Importation of freshwater ornamental fish: review of biosecurity risks associated with gourami iridovirus and related viruses – Provisional final import risk analysis report". Biosecurity Australia, Canberra, Australia.

Country: HONG KONG SAR Period: October - December 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	0000	0000	0000	II	
6. Red seabream iridoviral disease	-	-	-	III	
7. Koi herpesvirus disease	-	-	-	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10.Enteric septicaemia of catfish	0000	0000	0000	II	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Perkinsus olseni*	0000	0000	0000	II	
3. Infection with abalone herpes-like virus	0000	0000	0000	II	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
5. Acute viral necrosis (in scallops)	0000	0000	0000	II	
6. Akoya oyster disease	0000	0000	0000	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	
2. White spot disease	-	-	-	III	
3. Yellowhead disease	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	II	
5. Infectious myonecrosis	0000	0000	0000	II	
6.White tail disease (MrNV)	0000	0000	0000	II	
7. Necrotising hepatopancreatitis	0000	0000	0000	II	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	II	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000	II	
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000	II	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: INDIA **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	-	-	-		
3. Infection with abalone herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+( )	+( )	+( )	I	1
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Infectious myonecrosis	0000	0000	0000		
6.White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	-	-		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
		-	Not reported (but disease is known to occur)
?	Suspected by reporting officer but presence not confirmed	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Incidence of White spot disease was reported from very limited areas in Bhimavaram district of Andhra Pradesh; Uttara Kannada and Udupi districts of Karnataka; and Thiruvallur and Nagapattinam districts of Tamil Nadu during different months under the current reporting period.
2	
3	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: INDONESIA **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	+( )	0000	+( )	II	1
Non OIE-listed diseases					
8. Grouper iridoviral disease	+( )	0000	0000	III	2
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	0000	0000	0000		
3. Infection with abalone herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+( )	+( )	+( )	II,III	3
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	+( )	+( )	+( )	III	4
5. Infectious myonecrosis	-	+( )	+( )	III	5
6.White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

		+( )	Occurrence limited to certain zones
+	Disease reported or known to be present	***	No information available
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	0000	Never reported
		-	Not reported (but disease is known to occur)
?	Suspected by reporting officer but presence not confirmed	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	**KHV** 1. - 2. **Species affected:** common carp (*Cyprinus carpio*); 3. **Clinical signs:** irritation, pale gills 4. **Pathogen:** Koi herpes virus; 5. **Mortality rate:** 70%; 6. **Economic loss:** 7. **Names of infected areas:** Cirata, Cianjur, Kunigan (West Java), Palangkaraya (Central Kalimantan Province); 8. **Preventive/control measures:** Eradication of infected fish and quarantine on non-infected fish (moved to another pond); Vitamins and immunostimulant applied; 9. **Laboratory confirmation:** Freshwater Aquaculture Development Center Mandiangin Laboratory, Main Center Freshwater Aquaculture Development Sukabumi Laboratory; 10. **Publications :** not published.
2	**GIV** 1. - 2. **Species affected:** Silver pompano (*Trachionotus blochi*); 3. **Clinical signs:** Swimming near the water surface, swirling, darkened body coloration; 4. **Pathogen:** Grouper iridovirus; 5. **Mortality rate:** - 6. **Economic loss:** 7. **Names of infected areas:** TJ Bali Karimun Betam, Karimun Residences, Riau Islands province; 8. **Preventive/control measures:** multivitamin as feed additives, freshwater dipping; 9. **Laboratory confirmation:** Mariculture Development Center Batam Laboratory; 10. **Publications :** not published.

3	**WSSV** 1. - 2. **Species affected:** *Penaeus monodon*, *Litopenaeus vannamei* (PL, juveniles and adults), Trachinotus blochi; 3. **Clinical signs:** White spot on carapace of infected shrimps, shrimp becoming weak and swimming on the surface, loss of appetite; 4. **Pathogen:** Whte spot syndrome virus (Whispovirus); 5. **Mortality rate:** high (60% to 100%) 6. **Economic loss:** high; 7. **Names of infected areas:** *P. monodon* and *L. vannamei* PLs in Jepara ponds and hatcheries (Central Java), Pati, Kalimantan, Brebes, Alue Naga (Aceh province), West Lombok (West Nusa Tenggara), and Jembrana (Bali Province); 8. **Preventive/control measures:** disinfection with Clorinasi at 50 ppm, quarantine; 9. **Laboratory confirmation:** Mariculture Development Center Lombok Laboratory, Brackishwater Aquaculture Development Center Situbondo Laboratory, Main Center Brackishwater Aquaculture Development Laboratory Jepara, and Brackishwater Aquaculture Development Center Aceh Laboratory; 10. **Publications :** not published.
4	**IHHNV** 1. - 2. **Species affected:** white shrimp (*Litopenaeus vannamei*); 3. **Clinical signs:** slow growth (very small size/dwarf), abnormal morphology, and non-uniform in sizes; 4. **Pathogen:** Infectious hypodermal and haematopoietic necrosis virus (Parvovirus); 5. **Mortality rate:** medium to high 6. **Economic loss:** - 7. **Names of infected areas:** Jepara (Central Java), Jembrana (Bali), Tuban, Lamongan, Pasuran Sidoarjo, Probolinggo, Banyuwangi (East Java); 8. **Preventive/control measures:** - 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Situbondo Laboratory, Main Center Brackishwater Aquaculture Development Laboratory Jepara; 10. **Publications :** not published.
5	**IMNV** 1. - 2. **Species affected:** *Litopenaeus vannamei* (early juveniles, juveniles and adults); 3. **Clinical signs:** focal to extensive white necrotic areas in striated (skeletal) muscles, especially in the distal abdominal segments and tail fan, which can become necrotic and reddened in some affected shrimps; 4. **Pathogen:** Infectious myonecrosis virus; 5. **Mortality rate:** high 6. **Economic loss:** quite high; 7. **Names of infected areas:** Jepara, Pati, Brebes (Central Java), Lamongan (East Java); 8. **Preventive/control measures:** necessary control measures taken; 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Situbondo Laboratory, Main Center Brackishwater Aquaculture Development Laboratory Jepara; 10. **Publications :** not published.

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: IRAN **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	-	-	-		
3. Spring viraemia of carp	-	-	-		
4. Viral haemorrhagic septicaemia	-	-	-		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-		
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: JAPAN **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	III	
3. Spring viraemia of carp	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia	-	+	-	III	
5. Epizootic ulcerative syndrome	-	-	-	I	
6. Red seabream iridoviral disease	+	+	+	II,III	
7. Koi herpesvirus disease	+	+	-	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000	I	
9. Viral encephalopathy and retinopathy	-	-	-	I	
10.Enteric septicaemia of catfish	-	-	-	I	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	I	
2. Infection with *Perkinsus olseni*	-	-	-	I	
3. Infection with abalone herpes-like virus	0000	0000	0000	I	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	-	-	-	I	
5. Acute viral necrosis (in scallops)	0000	0000	0000	I	
6. Akoya oyster disease	+	+	-	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	I	
2. White spot disease	+	-	-	III	
3. Yellowhead disease	0000	0000	0000	I	
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	I	
5. Infectious myonecrosis	0000	0000	0000	I	
6.White tail disease (MrNV)	0000	0000	0000	I	
7. Necrotising hepatopancreatitis	0000	0000	0000	I	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	I	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000	I	
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	+?	-	-	III	1
2. Infection with *Batrachochytrium dendrobatidis*	-	-	-	I	
ANY OTHER DISEASES OF IMPORTANCE					
1. Infection with *Xenohaliotis californiensis*	+?	+?	+?	III	2
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	DNA of Ranavirus was isolated from *Fejervaya limnocharis* without any clinical symptoms in October
2	DNA of *Xenohaliotis californiensis* was isolated from *Haliotis gigantean* and *Sulculus diversicolor* without any clinical symptom. Stamping out and disinfection of infected premises were implemented in response to the outbreak.
3	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: LAO PDR **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	***	***	***		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	***	***	***		
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: MALAYSIA **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000	I,II,III	
3. Spring viraemia of carp	-	-	-	I,II,III	1
4. Viral haemorrhagic septicaemia	0000	0000	0000	I,II,III	
5. Epizootic ulcerative syndrome	(1986)	(1986)	(1986)	I.II	
6. Red seabream iridoviral disease	0000	0000	0000	I,II,III	
7. Koi herpesvirus disease	-	-	-	I,II,III	2
Non OIE-listed diseases					
8. Grouper iridoviral disease	+	+	-	III	3
9. Viral encephalopathy and retinopathy	-	-	+	III	4
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	0000	0000	0000		
3. Infection with abalone herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-	I,III	5
2. White spot disease	-	-	+	I,III	6
3. Yellowhead disease	-	-	-	I,III	7
4. Infectious hypodermal and haematopoietic necrosis	-	-	-	I,III	8
5. Infectious myonecrosis	-	-	-	III	9
6.White tail disease (MrNV)	-	-	+	III	10
7. Necrotising hepatopancreatitis	-	-	-	III	11
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	+	+	+		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	**Spring viraemia of carp** 1. No positive cases detected (PCR) although active surveillance was conducted by DOF
2	**Koi herpesvirus disease** 1. No positive cases detected (PCR) although active surveillance was conducted by DOF
3	**Grouper Iridoviral disease (GIV)** 1. All fish (Grouper and Arapaima) samples from Kedah and Penang were negative for Irido tested in NaFisH for diagnostic cases. 2. 1 of 38 samples from Kedah in October was positive for Irido, tested by DOF Palau Sayak, Kedah
4	**Viral encephalopathy and retinopathy** 1. All fish samples from Kedah and Penang were negative for VNN tested in NaFisH for diagnostic cases. 2. 2 samples (*Lates calcarifer*) were positive for VNN in December, tested by DOF from Kedah.

5	**Taura syndrome virus (TSV)** (*P. monodon, Litopenaeus vannamei*) 1. TSV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive on reported cases detected by PCR although active surveillance was conducted by DOF in West and East Malaysia.
6	**White Spot Syndrome Virus (WSSV)** 1. LIR (Lab Industrial Resources) (*P. monodon, Litopenaeus vannamei*) WSSV was not detected in all the samples sent to LIR for routin and monitoring purposes. 2. DOF (Department of Fisheries) (*Litopenaeus vannamei*) All samples (3) were positive for WSSV from Kedah in December, tested by DOF.
7	**Yellow head disease (YHV)** (*P. monodon, Litopenaeus vannamei*) 1. YHV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive cases detected (PCR) although active surveillance was conducted by DOF in East Malaysia
8	**Infectious hypodermal and haematopoietic necrosis virus (IHHNV)** (*Macrobrachium rosenbergi, P. Monodon, Litopenaeus vannamei*) 1. IHHNV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive on reported cases detected by PCR although active surveillance was conducted by DOF in West and East Malaysia.
9	**Infectious Myonecrosis (IMNV)** 1. IMNV was not detected in all the samples of *P. monodon* and *Litopenaeus vannamei* sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes.
10	***Macrobrachium rosenbergii* Nodavirus (MrNV)** 1. All samples tested by NaFisH were negative for MrNV. 2. 3 samples from Kedah were positive for MrNV in December, tested by DOF
11	**Necrotising hepatopancreatitis (NHPB)** 1. NHPB was not detected in all the samples of *P. monodon* and *Litopenaeus vannamei* sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes.

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: MYANMAR **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease					
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*					
2. Infection with *Perkinsus olseni*					
3. Infection with abalone herpes-like virus					
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*					
5. Acute viral necrosis (in scallops)					
6. Akoya oyster disease					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+( )	-	-	III	
2. White spot disease	+( )	-	-	III	1
3. Yellowhead disease	-	-	-	III	
4. Infectious hypodermal and haematopoietic necrosis	+( )	-	-	III	
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					
2. Infection with *Batrachochytrium dendrobatidis*					
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
		-	Not reported (but disease is known to occur)
?	Suspected by reporting officer but presence not confirmed	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	During this period, we have received 8 samples of shrimps (1 frozen; 2 broodstock; and 5 adults) for export and tested for WSSV, IHHNV and TSV. All samples were found negative.
2	
3	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: NEPAL **Period: October - December 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-	I	
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8.Grouper iridoviral disease					
9.Viral encephalopathy and retinopathy					
10.Enteric septicaemia of catfish					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6.Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	***	***	***		
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: PHILIPPINES Period: October - December 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	- (2002)	- (2002)	- (2002)		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-		
9. Viral encephalopathy and retinopathy	-	-	-		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	0000	0000	0000		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	1
2. White spot disease	+	+	-	III	2
3. Yellowhead disease	- (1999)	- (1999)	- (1999)	III	3
4. Infectious hypodermal and haematopoietic necrosis	+	-	+	III	4
5. Infectious myonecrosis	0000	0000	0000	III	5
6.White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis	0000	0000	0000	III	6
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

		+( )	Occurrence limited to certain zones
+	Disease reported or known to be present	***	No information available
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	0000	Never reported
		-	Not reported (but disease is known to occur)
?	Suspected by reporting officer but presence not confirmed	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Fifty-six (56) samples (40 *Penaeus vannamei* and 16 *Penaeus monodon*) of different stages (fry, broodstock and adult) were analyzed using the PCR test. All 56 samples showed a negative result for Taura Syndrome Virus. The samples were collected from Iloilo City, Bataan, Butuan City, Cebu City, Bohol, Sorsogon, Zambales, Lanao del Norte, Misamis Occidental and Occidental Mindoro. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
2	Eighty-nine (89) samples (68 *Penaeus vannamei* and 21 *Penaeus monodon*) of different stages (fry, juvenile, broodstock and adult) were analyzed using the PCR test. Six (6) samples (3 *Penaeus vannamei* and 3 *Penaeus monodon*) showed a positive result for White Spot Virus out of the total 89 samples. The positive samples came from Calatagan, Batangas (2); Camarines Sur (1); Tagkawayan, Quezon Province (1); Calape, Bohol (1); and Sorsogon City (1). The samples were collected from Iloilo City, Bataan, Ormoc City, Batangas, Camarines Sur, Quezon Province, Bohol, Zambales, Lanao del Norte, Misamis Occidental and Occidental Mindoro. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
3	Fifty-five (55) samples (19 *Penaeus vannamei* and 36 *Penaeus monodon*) of different stages (fry, broodstock and adult) were analyzed using the PCR test. All 55 samples showed a negative result for Yellowhead Virus. The samples were collected from Iloilo City, Bataan, Butuan City, Ormoc City, Sorsogon City, Leyte, Zambales, Lanao del Norte, Misamis Occidental and Occidental Mindoro. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.

4	Seventy-five (75) samples (35 *Penaeus vannamei* and 40 *Penaeus monodon*) of different stages (fry, broodstock and adult) were analyzed using the PCR test. Out of the 73 samples, seven (7) samples (5 *P. monodon* and 2 *P. vannamei*) showed a positive result for Infectious Hypodermal and Haematopoietic Necrosis Virus through PCR test. The positive samples came from Ormoc City (1), Caridad, Leyte (4) and San Jose, Occidental Mindoro (2). The samples were collected from Iloilo City, Aklan, Butuan City, Bataan, Ormoc City, Leyte, Cebu, Bohol, Sorsogon, Zambales, Lanao del Norte, Occidental Mindoro and Misamis Occidental. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
5	Eighty-two (82) samples (35 *Penaeus vannamei* and 47 *Penaeus monodon*) of different stages (fry, juvenile, broodstock and adult) were analyzed using the PCR test. All the samples showed a negative result for Infectious Myonecrosis Virus. The samples were collected from Iloilo City, Bataan, Butuan City, Leyte, Ormoc City, Davao del Sur, Batangas, Camarines Sur, Quezon Province, Bohol, Cebu City, Sorsogon, Lanao del Norte, Misamis Occidental, Zambales, and Occidental Mindoro. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
6	Sixty-two (62) samples (47 *Penaeus vannamei* and 15 *Penaeus monodon*) of different stages (fry, broodstock and adult) were analyzed using the PCR test and all samples showed a negative result for Necrotising Hepatopancreatitis. All samples were collected from Butuan City, Bataan, Iloilo city, Zambales, Sorsogon, Cebu City, Bohol, Lanao del Norte, Misamis Occidental and Occidental Mindoro. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: SINGAPORE Period: October - December 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	0000	0000	0000	I,II,III	1
6. Red seabream iridoviral disease	(2011)	(2011)	(2011)	I,II,III	2
7. Koi herpesvirus disease	(2011)	(2011)	(2011)	III	5
Non OIE-listed diseases					
8. Grouper iridoviral disease	+	(2011)	(2011)	I,II,III	2
9. Viral encephalopathy and retinopathy	+	(2011)	+	I,II,III	3
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	7
2. White spot disease	(2011)	(2011)	(2011)	III	4
3. Yellowhead disease	0000	0000	0000	III	7
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	III	7
5. Infectious myonecrosis	0000	0000	0000	III	7
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	0000	III	7
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		

ANY OTHER DISEASES OF IMPORTANCE					
1. Systemic iridoviral disease (Mullet or Milkfish)	(2010)	(2011)	(2011)	I,II,III	2
2. Seabass iridovirus disease	(2010)	(2010)	(2010)		
3. Iridoviral disease (ornamental fish)	(2011)	(2011)	(2011)	I,II,III	2
4. *Aeromonas salmonicida*	0000	0000	0000	II,III	6

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Epizootic ulcerative syndrome was not reported despite targeted surveillance of diseased fish from exporter's premises and voluntary submissions this quarter. No granulomas containing GMS positive fungal hyphae were observed on histopathological examination of all 27 cases of fish submitted for EUS surveillance.
2	Infectious spleen and kidney necrosis virus (ISKNV) was detected in 1 batch of diseased hybrid grouper fingerlings submitted as part of a targeted surveillance on imported marine food fish fingerlings in October. The fingerlings were tested 9 days post-arrival. Viral nervous necrosis virus (VNNV) was detected in the same batch of fish. Sixty-six (66) cases of marine food fish and 16 cases of freshwater ornamental fish submitted under targeted surveillance programs this year were tested for red seabream iridovirus (RSIV) and ISKNV using primer sets 1 and 4 as described by Kurita et al. (1998). Three out of 66 marine food fish cases (Asian seabass) were positive for RSIV, while ISKNV was detected in 4 out of 66 cases (hybrid grouper, mullet and milkfish). Five out of 16 freshwater ornamental fish (gourami, swordtail and platy) were positive for ISKNV.

3	Viral encephalopathy and retinopathy or viral nervous necrosis virus (VNNV) was detected in two batches of mouse and hybrid grouper fingerlings (see comment no. 2) submitted in October, and 1 batch of hybrid grouper fingerlings submitted in December as part of the targeted surveillance on imported marine food fish fingerlings. The farmer was advised to remove moribund fish from tanks, keep all incoming fish in quarantine tanks and to practice good biosecurity measures. Sixty-nine cases of marine food fish from targeted surveillance, health monitoring programs and disease investigations were tested for VNNV in 2011, out of which, 8 cases were found to be positive.
4	There were no positive detections of white spot syndrome virus (WSSV) in crustaceans this quarter despite targeted surveillance. Forty-eight cases of marine and freswhawter crustacean, both food and ornamental species, were tested in 2011, half of which were from voluntary submissions. WSSV was detected in 8 cases.
5	Koi herpesvirus (KHV) was not detected in 42 cases of ornamental koi carp submitted this quarter. One hundred and fifty five cases of ornamental koi carp were submitted under targeted surveillance, disease diagnosis and voluntary cases for KHV this year. KHV was detected in one consignment of imported koi while it was in quarantine. All koi in that consignment were destroyed.
6	**Update on Surveillance for *Aeromonas salmonicida* in Goldfish for Australian Import Requirements** *A. salmonicida* was not detected in all six batches of goldfish submitted under this targeted surveillance program this quarter. *A. salmonicida* has not been isolated from all 36 batches of goldfish tested under this surveillance program in 2011.
7	**Update on diagnostic capabilities for detection of shrimp pathogens** Samples submitted as part of a health surveillance program from one land-based *Litopenaeus vannamei* farm have been screened for WSSV, Taura syndrome virus (TSV), yellowhead virus (YHV), infectious hypodermal and haematopoietic necrosis virus (IHHNV) by conventional PCR since 2005, and by real time PCR in 2010 (for WSSV) and 2011 (for TSV, YHV and IHHNV). Tests for infectious myonecrosis virus (IMNV), necrotizing hepatopancreatitis bacterium (NHPB) and *Baculovirus penaei* (BP) were previously carried out by post mortem and histopathological examination of whole animals. PCR tests for these were developed in Jan and Dec 2011, and added to the farm's health monitoring program. All samples were collected and submitted by the farm, and none of these pathogens have been detected from all the samples so far. Testing for these pathogens is not carried our at a national level.

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: THAILAND Period: October - December 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	(2009)	(2009)	(2009)	II	
6. Red seabream iridoviral disease	0000	0000	0000	III	
7. Koi herpesvirus disease	(05/2011)	(05/2011)	(05/2011)	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10.Enteric septicaemia of catfish	0000	0000	0000	II	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Perkinsus olseni*	0000	0000	0000	II	
3. Infection with abalone herpes-like virus	0000	0000	0000	II	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-	III	1
2. White spot disease	-	-	+( )	III	2
3. Yellowhead disease	-	-	+( )	III	3
4. Infectious hypodermal and haematopoietic necrosis	+( )	+( )	+( )	III	4
5. Infectious myonecrosis	0000	0000	0000	III	
6.White tail disease (MrNV)	-	-	+( )	III	5
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	II	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(07/2011)	(07/2011)	(07/2011)	III	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	A total of 331 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. All testing results for TSV were negative.
2	A total of 214 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 8 specimen or 3.7% recorded as PCR positive or carrying WSSV genes. Shrimp farm with positive testing results is subjected to health improvement, movement control, eradication and/or farm dis-infection.
3	A total of 210 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 3 specimens or 1.4% recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results are subjected to health improvement, movement control, eradication and/or farm dis-infection.
4	A total of 208 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 7 specimens or 3.4 % recorded as PCR positive or carrying IHHNV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
5	Giant freshwater prawn specimens from two farms were submitted for *Mr*NV testing under active surveillance. The specimens of one farm, located in Prachubkhirikhan Province, showed PCR positive for *Mr*NV. The positive prawns did not have disease or white tail clinical signs. Prawn farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.

2. New aquatic animal health regulations introduced within past six months (with effective date):

Country: VIETNAM Period: October - December 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	+	+	+	I,II	1
3. Infection with abalone herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	I,II,III	2
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Infectious myonecrosis	0000	0000	0000		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	-	-	-		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Unknown disease (*P. monodon* and *P. vannamei*)					3
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Pathogen: *Perkinsus olseni* Species affected: *Meretrix lylata*; Mortality rate: from 30 to 80% Infected areas: Can Gio district (Ho Chi Minh City) Control measures: dead clams were collected and chemical treatment applied; early harvest.
2	Pathogen: White spot syndrome virus (WSSV) Species affected: black tiger shrimp (*Penaeus monodon*) and white leg shrimp (*Litopenaeus vannamei*); Clinical signs: lethargic or moribund shrimp accumulated at pond surface and edges, slow to erratic swimming behavior. Overall body color often reddish. Minute to large (0.5-2.0 mm diameter) white inclusions embedded in the cuticle, especially in the removed carapace held to the light after scraping off attached tissues (not always seen). Moratlity rate: medium to high, 100% within 10 days in some cases; The disease occurred in Ca Mau province (21.22 ha) and Ho Chi Minh City (51.11 ha); Control measures: early harvest, strict isolation of outbreak ponds with movement controls and control of transportation. Disinfection of outbreak ponds using Calcium hypochlorite (Chlorine).

3	Unknown disease: The disease is still affecting the Mekong Delta area (Soc Trang: 1,719 ha; Bac Lieu: 346 ha; and Ca Mau: 3,493 ha) and in South Central Coast (Ninh Thuan province: 16 ha). Affected area accounted a total of 5,574 h. Mortalities as high as 90% were recorded at 20-30 days post stocking in both *P.monodon* and *P. vannamei* under intensive and semi-intensive farming systems. Pathogen(s) have not been confirmed. Initial findings suggested that primary cause of death might be due to accumulated toxicity from chemicals used in aquaculture and/or microorganisms (bacteria). Histological examination showed various stages of acute hepatopancreatic degeneration and necrosis syndrome (AHPDNS).

2. New aquatic animal health regulations introduced within past six months (with effective date):

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Report (Beginning 2011)

1. DISEASES PREVALENT IN THE REGION	
1.1 FINFISH DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Epizootic haematopoietic necrosis	1.Grouper iridoviral disease
2. Infectious haematopoietic necrosis	2.Viral encephalopathy and retinopathy
3. Spring viraemia of carp	3.Enteric septicaemia of catfish
4. Viral haemorrhagic septicaemia	
5. Epizootic ulcerative syndrome	
6. Red seabream iridoviral disease	
7. Infection with koi herpesvirus	
1.2 MOLLUSC DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia exitiosa*	1. Infection with *Marteilioides chungmuensis*
2. Infection with *Perkinsus olseni*	2. Akoya oyster disease
3. Infection with abalone herpes-like virus	3. Acute viral necrosis (in scallops)
1.3 CRUSTACEAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Taura syndrome	1. Monodon slow growth syndrome
2. White spot disease	3. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)
3. Yellowhead disease	
4. Infectious hypodermal and haematopoietic necrosis	
5. Infectious myonecrosis	
6. White tail disease (MrNV)	
7. Necrotising hepatopancreatitis	
1.4 AMPHIBIAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with Ranavirus	
2. Infection with *Bachtracochytrium dendrobatidis*	
2. DISEASES PRESUMED EXOTIC TO THE REGION	
2.1 Finfish	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infectious salmon anaemia	1. Channel catfish virus disease
2. Gyrodactylosis (*Gyrodactylus salaris*)	
2.2 Molluscs	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia ostreae*	
2. Infection with *Marteilia refringens*	
3. Infection with *Perkinsus marinus*	
4. Infection with *Xenohaliotis californiensis*	
2.3 Crustaceans	
OIE-listed diseases	**Non OIE-listed diseases**
1. Crayfish plague (*Aphanomyces astaci*)	

Recent Aquatic Animal Health Related Publications

OIE Aquatic Animal Health Code, 13th Edition, 2010. The aim of the Aquatic Animal Health Code (hereafter referred to as the 'Aquatic Code') is to assure the sanitary safety of international trade in aquatic animals (amphibians, crustaceans, fish and molluscs) and their products. This is achieved through the detailing of health measures to be used by Competent Authorities of importing and exporting countries to avoid the transfer of agents pathogenic for animals or humans, while avoiding unjustified sanitary barriers. The health measures in the Aquatic Code (in the form of standards and recommendations) have been formally adopted by the World Assembly of OIE Delegates which constitutes the organisation's highest decision-making body. This 13th edition incorporates the modifications to the Aquatic Code agreed by the World Assembly during the 78th General Session in May 2010. The Aquatic Animal Health Code is available for free download at http://www.oie.int/en/international-standard-setting/aquatic-code/access-online/. The book may be also be ordered from OIE online bookshop at http://www.oie.int/boutique/index.php?lang=en.

OIE Manual of Diagnostic Tests for Aquatic Animals, 2010. The purpose of this manual is to provide a uniform approach to the detection of the diseases listed in the OIE *Aquatic Animal Health Code*, so that the requirements for health certification in connection with trade in aquatic animals and aquatic animal products can be met. It includes bibliographical references and a list of the OIE Reference Laboratories for amphibian, crustacean, fish and mollusc diseases. The manual is available for free download at http://www.oie.int/en/international-standard-setting/aquatic-manual/access-online/ and can be ordered at http://www.oie.int/boutique/index.php?lang=en.

Senapin, S., Phiwsaiya, K., Gangnonngiw, W., Flegel, T., 2011. **False rumours of disease outbreaks caused by infectious myonecrosis virus (IMNV) in the whiteleg shrimp in Asia.** Journal of Negative Results in BioMedicine, 10:10.

Rodgers, C.J., Mohan, C.V., Peeler, E.J., 2011. **The spread of pathogens through trade in aquatic animals and their products.** Rev. Sci. Tech, Off. Int. Epiz., 30: 241-256.

Jithendran, K.P., Shekar, M.S., Kannapan, S., Azad, I.S., 2011. **Nodavirus infection in freshwater ornamental fishes in India: diagnostic histopathology and nested PCR.** Asian Fisheries Science, 24:12-19.

Alday-Sanz, V., 2010. Chapter 24: **Designing a biosecurity plan at the facility level: criteria, steps and obstacles.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 655-678.

Benitez, J., Juarez, L., 2010. Chapter 30: **The State Committees for Aquaculture Health: a success story from Mexico.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 821-833

Chen, S., Santos, M.D., Cowley, J., 2010. Chapter 28: **What will PCR bring to shrimp farming: contribution, compromise or conflict.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 751-772.

Corsin, F., de Blas, N., 2010. Chapter 27: **Shrimp epidemiology: applying population-based methods to shrimp health management.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 713-749.

Cuellar-Anjel, J., Corteel, M., Galli, L., Alday-Sanz, V., Hasson, K.W., 2010. Chapter 22: **Principal shrimp infectious diseases, diagnosis and management**. In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 517-621

Flegel, T.W., 2010. Chapter 23: **Importance of host-viral interactions in the control of shrimp disease outbreaks.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 623-654.

Karunasagar, In., Karunasagar, Id., Alday-Sanz, V., 2010. Chapter 26: **Immunostimulants, probiotics and phage therapy: alternatives to antibiotics.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 695-711.

Lotz, J.M., 2010. Chapter 25: **Evolutionary principles applied to disease control and health management in shrimp aquaculture.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 679-694.

Smith, P., 2010. Chapter 29: **An economic framework for discussing antimicrobial agent use in shrimp farming.** In: V. Alday-Sanz (ed), The Shrimp Book, Nottingham University Press. p. 773-820.

Lightner, D.V., Redman, R.M., 2010. **The global status of significant infectious diseases of farmed shrimp.** Asian Fisheries Science, 23:383-426.

Kono, T., Fall, J., Korenaga, H., Takayama, H., Iizasa, T., Mekata, T., Itami, T., Sakai, M., 2010. **Immunomodulation by DNA vaccination against white spot syndrome virus (WSSV).** Asian Fisheries Science, 23:435-446.

Sudhakaran, R., Mekata, T., Inada, M., Okugawa, S., Kono, T., Supamattaya, K., Yoshida, T., Sakai, M., Itami, T., 2010. **Development of rapid, simple and sensitive real-time reverse transcriptase loop-mediated isothermal amplification method (RT-LAMP) to detect viral diseases (PRDV, YHV, IHHNV and TSV) of penaeid shrimp.** Asian Fisheries Science, 23:561-575.

SEAFDEC AQD, 2010. **Prevention and Control of Parasites in Groupers** (Flyer). SEAFDEC Aquaculture Department, Tigbauan, Iloilo, Philippines. Available for free download at http://www.seafdec.org.ph/publications_downloadable.html

Corsin, F., Georgiadis, M., Larry Hammel, K. and Hill, B., 2009. **Guide for Aquatic Animal Health Surveillance**. World Organization for Animal Health (OIE), Paris, France. 114 pp. Efficient and reliable surveillance systems generate sound evidence for disease incidence, prevalence and distribution, or for demonstrating disease absence. Science-based decisions regarding the health of aquatic animals rely on the information generated by surveillance programs. This practical handbook about surveillance is intended to be used mainly by Veterinary Services or other Competent Authorities, their staff and experts, for designing, implementing, and evaluating surveillance systems for diseases of relevance for aquatic animals in their country. The book can be ordered at http://www.oie.int/boutique/index.php?lang=en.

WHO-FAO Food Hygiene (Basic Texts), 4th Edition, 2009. World Health Organization and Food and Agriculture Organization of the United Nation, Rome, Italy. The Codex basic texts on food hygiene promote understanding of how rules and regulations on food hygiene are developed and applied. The General Principles of food hygiene cover hygiene practices from primary production through to final consumption, highlighting the key hygiene controls at each stage. This publication also contains the most internationally used description of the Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application. This fourth edition includes texts adopted by the Codex Alimentarius Commission up to 2009. The texts will be of use to government authorities, food industries, food handlers and consumers, as well as teachers and students of food hygiene.

Bondad-Reantaso, M.G., Arthur, J.R., Subasinghe, R.P. (eds), 2009. **Strengthening Aquaculture Health Management in Bosnia and Herzegovina**. FAO Fisheries and Aquaculture Technical Paper No. 524, Food an Agriculture Organization of the United Nation, Rome, Italy. 83 pp.

FAO, 2009. **Report of the International Disease Investigation Task Force on a Serious Finfish Disease in Southern Africa**. Food and Agriculture Organization of the United Nations, Rome, Italy. 70 pp.

FAO, 2009. **What You Need to Know about Epizootic Ulcerative Syndrome: An Extension Brochure**. Food and Agriculture Organization of the United Nations, Rome, Italy. 33 pp.

RECOFI. 2009. Proposal for a Regional Programme for Improving Aquatic Animal Health in RECOFI Member Countries. FAO Fisheries and Aquaculture Report No. 876, Food and Agriculture Organization of the United Nations, Rome, Italy. p. 101-118

Bondad-Reantaso, M.G., Arthur, J.R. and Subasinghe, R.P. (eds.). 2008. **Understanding and applying risk analysis in aquaculture.** *FAO Fisheries and Aquaculture Technical Paper. No. 519.* Rome, FAO. 2008. 304p. Risk analysis is an objective, systematic, standardized and defensible method of assessing the likelihood of negative consequences occurring due to a proposed action or activity and the likely magnitude of those consequences, or, simply put, it is "science-based decision-making"

FAO. Report of FAO **Workshop on Information Requirements for Maintaining Aquatic Animal Biosecurity.** Cebu City, Philippines, 15−17 February 2007. *FAO Fisheries and Aquaculture Report*. No. 877. Rome, FAO. 2008. 27p.

FAO Regional Commission for Fisheries. **Report of the Regional Technical Workshop on Aquatic Animal Health.** Jeddah. Kingdom of Saudi Arabia, 6-10 April 2008. FAO Fisheries and Aquaculture Report. No. 831. Rome, FAO. 2008. 120 pp**.**

FAO. 2009. **Report of the International Emergency Disease Investigation Task Force on a Serious Finfish Disease in Southern Africa, 18-26 May 2007.** Rome, FAO. 2009.

Arthur, J.R., Bondad-Reantaso, M.G. and Subasinghe, R.P. 2008. **Procedures for the quarantine of live aquatic animals: a manual**. FAO Fisheries Technical Paper No. 502. Rome, FAO. 2008. 74p.

Bondad-Reantaso, M.G., Mohan, C.V., Crumlish, M. and Subasinghe, R.P. (eds.) 2008. **Proceedings of the Sixth Symposium on Diseases in Asian Aquaculture (DAA VI)**. 25-28 October 2005, Colombo, Sri Lanka. Fish Health Section. 505 pp.

Bernoth, E.-M. (Coordinator). 2008. **Changing Trends in Managing Aquatic Animal Disease Emergencies.** OIE Scientific and Technical Review, Volume 27(1), April 2008. 281p.

Bondad-Reantaso, M.G., McGladdery, S.E. and Berthe, F.C.J. 2007. **Pearl oyster health management: a manual.** FAO Fisheries Technical Paper. No. 503. Rome, FAO. 2007. 120p.

Kirjusina, M. and Vismanis, K. 2007. **Checklist of the parasites of fishes of Latvia. FAO Fisheries Technical Paper. 369/3.** Rome, FAO. 113p.

Dodet, B., the OIE Scientific and Technical Department (eds.). **The OIE Global Conference on Aquatic Animal Health.** Dev Biol (Basel), Basel, Karger, Volume 29. 193p.

Aquatic Animal Diseases Significant to Asia-Pacific: Identification Field Guide: NACA and the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) have recently produced this field guide to support aquatic animal health surveillance, early response and reporting in the region. The field guide drew extensively from the experiences and previous and ongoing research activities in health management in Australia and other countries in Asia and thus joins the growing body of practical knowledge published for Asia-Pacific aquaculture and fisheries. The regional field guide covers all diseases listed in the Quarterly Aquatic Animal Disease (QAAD) reporting system, which includes all OIE listed diseases plus diseases of regional concern. The field guide is available for free download at http://www.enaca.org/modules/news/article.php?storyid=1003

FAO. 2007. Aquaculture development 2. **Health management for the responsible movement of live aquatic animals**. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 2. Rome, FAO. 2007. 31p. Further information: Rohana.Subasinghe@fao.org

List of National Coordinators*

Country	Name and Address
Australia	Dr. Ingo Ernst Aquatic Animal Health Unit Office of the Chief Veterinary Officer Department of Agriculture, Fisheries and Forestry GPO Box 858, Canberra ACT 2601, Australia Fax: +61-2-6272 3150; Tel: +61-2-6272 4328 Email: ingo.ernst@daff.gov.au Dr. Herbert Brett Aquatic Animal Health Unit , Office of the Chief Veterinary Officer Department of Agriculture, Fisheries and Forestry GPO Box 858, Canberra ACT 2601, Australia Fax: +61 2 6272 3150; tel: +61 2 6272 4009 E-mail: brett.herbert@daff.gov.au
Bangladesh	Dr. M. G. Hussain Director General, Bangladesh Fisheries Research Institute (BFRI) Mymensingh 2201, Bangladesh Fax: +880-91-66559, Tel: +880-91-65874 E-mail: hussain.bfri@gmail.com; dg@fri.gov.bd; dgbfri@gmail.com
Cambodia	Dr. So Nam Deputy Director Inland Fisheries Research and Development Institute (IFReDI) 186, Norodom Blvd, Phnom Penh, Cambodia Telephone +855 23 220 417 Fax. +855 23 220 417 E-mail: so_nam@hotmail.com
China	Mr. Zhuzewen Disease Prevention and Control Division National Fisheries Technique Extension Center (NFTEC) Ministry of Agriculture Mai Zi Dian Street No 18 Chanyang District, Beijing 100026, China Fax: +86-10-65074250; Tel: +86-10-64195073 E-mail:zewenzhu@sina.com
DPR Korea	Mr. Chong Yong Ho Director of Fish Farming Technical Department, Bureau of Freshwater Culture Sochangdong Central District, P.O.Box. 95 , Pyongyong, DPR Korea Fax: +850-2-814416; Tel: 3816001, 3816121
Hong Kong China	Ms. Situ Ying-yi Fisheries Officer (Aquaculture Management) 2 Agriculture, Fisheries and Conservation Department 8/F, Cheung Sha Wan Government Offices 303 Cheung Sha Wan Road, Kowloon, Hong Kong SAR Fax: +852 21520383; Tel: +852 21526808 E-mail: anna_yy_situ@afcd.gov.hk

* The matrix provides a list of National Coordinators and focal points nominated by governments for the *Asia-Pacific Quarterly Aquatic Animal Disease Reports*.

India	Mr. Intisar Anees Siddiqui Fisheries Research & Investigation Officer Department of Animal Husbandry, Dairying and Fisheries Ministry of Agriculture, Krishi Bhawan, New Delhi 110114, India Tel: +91-11-23389419/23097013 Fax: +91-11-23070370/23384030 E-mail: intisarsiddiqui@yahoo.co.in
Indonesia	Dr. Muhammad Murdjani Director, Fish Health and Environment Ministry of Marine Affairs and Fisheries Directorate General of Aquaculture Jl. Harsono RM No. 3, Gedung Ps. Minggu Jakarta Selatan Indonesia 12550 Fax: +62-21-78835853; Tel: +62-21-7890552 E-mail: anna_murdjani@yahoo.com.id
Iran	Dr. Mohammad Azizzadeh Manager Director of Aquatic Animal Diseases Department Veterinary Organization Ministry of Jihad – E – Sazandegi Vali-ASR Ave, S.J.Asad Abadi St PO Box 14155 – 6349, Tehran, Iran Tel: +98 21 88957007; Fax: +98 21 88957252 E-mail: ivoaquatichealth@ivo.org.ir Dr. Kazem Abdi Khazineh Jadid Director General, Aquatic Animal Health Department Iran Veterinary Organization Ministry of Jihad-E-Agriculture Seyed Jamaledin Asad-Abadi St., Vali-Asr Ave. P.O.Box 14155-6349, Tehran, Iran Tel: +98-21-88966877; Fax: +98-21-88957252 E-mail: ivoquarantin@ivo.org.ir
Japan	Mr. Mahito Masuda Fish and Fishery Products Safety Office Food Safety and Consumer Affairs Bureau Ministry of Agriculture, Forestry and Fisheries 1-2-1, Kasumigaseki Chiyoda-ku, Tokyo 100-8950, Japan Fax: +813-3502-8275; Tel: +813-3502-8098 E-mail: mahito_masuda@nm.maff.go.jp
Lao PDR	Mrs. Thongphoun Theungphachanh Quality Control Animal Product Department of Livestock and Fisheries DLF PO Box 811, Lao PDR Fax : +856 21 216380; Tel: +856 21 216380 or Mobile: +856 20 772 1115 Email: theungphachan@yahoo.com Dr. Bounthong Saphakdy Director of Fisheries Division Department of Livestock and Fisheries DLF P.O. Box 811, Lao PDR E-mail: saphakdy@yahoo.com

Malaysia	Dr. Siti Zahrah Abdullah National Fish Health Research Centre 11960 Batu Maung Penang, Malaysia Fax: +60 4 6263977; Tel: +60 4 6263922 E-mail: siti.zahrah.abd@gmail.com
Myanmar	Mr. U Saw Lah Pah Wah Department of Fisheries, Ministry of Livestock and Fisheries Sin Minn Road, Alone Township, Yangon, Myanmar Fax: +95 01 228-253; Tel: +95 01 283-304/705-547 E-mail: dof@mptmail.net.mm
Nepal	Mr. Jay Kishore Mandal Senior Fisheries Development Officer Central Fisheries Laboratory Central Fisheries Building, Balaju, Kathmandu. Nepal. E-mail: mandaljaykishore@yahoo.com
Pakistan	Mr. Anser Mahmood Chatta Deputy Fisheries Development Commissioner Livestock Division, Ministry of Food, Agriculture and Livestock 10th Floor, Shaheed-e-Millat Secretariat (Livestock Wing) I Islamabad, Pakistan Fax: +9251 9212630; Tel: +9251 9208267, ansermchatta@yahoo.com
Philippines	Dr. Joselito R. Somga Aquaculturist II, Fish Health Section, BFAR 860 Arcadia Building, Quezon Avenue, Quezon City 1003 Fax: +63 2 3725055/4109987; Tel: +63 2 3723878 loc206 or 4109988 to 89 E-mail: jsomga@bfar.da.gov.ph
Republic of Korea	Dr. Myoung Ae Park Director, Pathology Division National Fisheries Research and Development Institute 152-1, Haeanro, Gijang-up Gijang-gun, Busan 619-705 Korea Tel: +82-51-7202470 E-mail: mapark@nfrdi.go.kr
Singapore	Mr. Hanif Loo Jang Jing Programme Executive (Aquaculture) Aquaculture Branch Food Supply & Technology Department Agri-Food & Veterinary Authority of Singapore 5 Maxwell Road, #01-00, Tower Block, MND Complex, Singapore 069110 Fax: +65 63257677; Tel: +65 63257636; Email: loo_jang_jing@ava.gov.sg Ms. Diana Chee Aquatic Animal Health Branch Animal and Plant Health Laboratories 6 Perahu Road, Singapore 718827 Fax: +65 63161090; Tel: +65 63165140 E-mail: Diana_Chee@AVA.gov.sg
Sri Lanka	Dr. Rajapaksa Arachilage Geetha Ramani Veterinary Investigation Officer Veterinary Investigation Center Department of Animal Production and Health Welisara, Sri Lanka Tel: +94-112-9258213; +94-714-932169 E-mail – vic_welisara@yahoo.com

Thailand	Dr. Somkiat Kanchanakhan Fish Virologist, Aquatic Animal Health Research Institute (AAHRI) Department of Fisheries , Kasetsart University Campus Jatujak, Bangkok 10900, Thailand Fax: +66 2 5613993; Tel: +66 2 5794122, 5796977 E-mail: somkiatkc@fisheries.go.th
Vietnam	Dr. Le Van Khoa Deputy Chief Aquatic Animal Health Unit Department of Animal Health (DAH) 15/78 Giai Phong Street, Dpng Da Hanoi, Vietnam Fax: +84 4 38685961; Tel: +84 4 38693605 E-mail: lvkhoa@dah.gov.vn

Instructions on how to fill in the
QUARTERLY AQUATIC ANIMAL DISEASE REPORT
(Revised during the Provisional Meeting of the AG[1], Bangkok, Thailand, November 7-9, 2001)

Symbols used in the report are similar to those used by FAO, OIE and WHO for the *Animal Health Yearbook*. Please read these instructions carefully before you fill in the forms.

Under the heading 'Country', please enter your country.

Under the heading 'Period', please enter the reporting quarter (months) and year, e.g. January to March 2002.

Under the heading "Month", please enter months of a quarter in question, e.g. January, February, March.

In "Level of Diagnosis", please enter the Level of Diagnosis used, e.g., I, II, or III. See Section C below.

In "Epidemiological Comment Numbers", please enter the serial numbers, and write your corresponding epidemiological comments on page 2. See Section D below for guidance on the subjects to be covered under Epidemiological Comments.

If an unknown disease of serious nature appears, please fill in the last line of the form, with additional information on "Level of Diagnosis" and "Epidemiological Comment Numbers" as above.

Please do not fail to enter "*******" or "**-**" as appropriate against each disease, which is essential to incorporate your information on the *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region.)*

If you have new aquatic animal health regulations introduced within the past six months, please describe them under Section 2 on page 2.

Please use the following symbols to fill in the forms.

A. Symbols used for negative occurrence are as follows:

*** This symbol means that no information on a disease in question is available due to reasons such as lack of surveillance systems or expertise.

- This symbol is used when a disease is not reported during a reporting period. However the disease is known to be present in the country (date of last outbreak is not always known).

0000 This symbol is used when disease surveillance is in place and a disease has never been reported.

(year) Year of last occurrence (a disease has been absent since then).

B. Symbols used for positive occurrence are shown below.

+ This symbol means that the disease in question is reported or known to be present.

+? This symbol is used when the presence of a disease is suspected but there is no recognised occurrence of clinical signs of the disease in the country. Serological evidence and isolation of the causal agent may indicate the presence of the disease, but no confirmed report is available. **It is important that the species of animals to which it applies is indicated in the "Comments" on page 2 of the form if you use this symbol**.

+( ) These symbols mean that a disease is present in a very limited zone or zones as exceptional cases. It may also include the occurrence of a disease in a quarantine area.

? This symbol is used only when a disease is suspected by the reporting officer, but the presence of the disease has not been confirmed.

[1] Regional Advisory Group on Aquatic Animal Health (AG)

C. Levels of Diagnosis

LEVEL	SITE	ACTIVITY
I	Field	Observation of animal and the environment Clinical examination
II	Laboratory	Parasitology Bacteriology Mycology Histopathology
III	Laboratory	Virology Electron microscopy Molecular biology Immunology

D. Subjects to be covered in the Epidemiological Comments

1. Origin of the disease or pathogen (history of the disease);
2. Mortality rate (high/low or decreasing/increasing);
3. Size of infected areas or names of infected areas;
4. Death toll (economic loss, etc.);
5. Preventive/control measures taken;
6. Disease characteristics (unusual clinical signs or lesions);
7. Pathogen (isolated/sero-typed);
8. Unknown diseases (describe details as much as possible);
9. Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); and
10. Published paper (articles in journals)/web site, etc.

IMPORTANT

Please send the **original report** or the best photocopy thereof to the OIE and/or NACA **by fax** and **registered airmail**. Faxed reports are needed to check whether or not the reports are all right. The deadline for submission of the reports is **two and a half months (75 days)** after the end of the quarterly period.

If you require further explanation, please write to the OIE (Tokyo), NACA (Bangkok) or FAO (Rome) at the following addresses, respectively:

OIE Regional Representation for Asia and the Pacific
Food Science Building 5F
The University of Tokyo
1-1-1 Yayoi, Bunkyo-ku
Tokyo, 113-8657, Japan
Tel. +81 3 5805 1931; Fax +81 3 5805 1934
E-Mail: rr.asiapacific@oie.int

NACA
P. O. Box 1040, Kasetsart Post Office, Bangkok 10903, Thailand
Tel: 66-2-561-1728/9 (ext. 117); Fax: 66-2-561-1727
Dr. C.V. Mohan
E-mail: eduardo@enaca.org

FAO
Fishery Resources Division, Fisheries Department
FAO of the United Nations
Viale delle Terme di Caracalla, 00100 Rome
Tel. +39 06 570 56473; Fax + 39 06 570 530 20
E-mail: Rohana.Subasinghe@fao.org

Notes

Published by the Network of Aquaculture Centres in Asia-Pacific and the Food and Agriculture Organization of the United Nations. For inquiries regarding editorial or technical content, please write to
NACA, P.O. Box 1040, Kasetsart P.O. , Bangkok 10903, Thailand; Tel. (662) 561- 1728 to 9; Fax: (662) 561-1727;
e-mail: **info@enaca.org** or **eduardo@enaca.org.**
Website: **http://www.enaca.org**

ISSN 1513-6558