2014/1

QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

January – March 2014

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

July 2014

Network of Aquaculture Centres in Asia-Pacific and Food and Agriculture Organization of the United Nations. July, 2014. *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region)*, 2014/1, January – March 2014. NACA: Bangkok, Thailand.

Contents

Foreword iv

Reports Received by the NACA Secretariat

Australia 1
Hong Kong 6
India 8
Indonesia 10
Iran 14
Japan 16
Lao PDR 18
Malaysia 20
Myanmar 23
Nepal 25
Philippines 27
Singapore 30
Sri Lanka 33
Thailand 35
Vietnam 37

List of Diseases under the Asia-Pacific Quarterly Aquatic Animal Disease Report 40
Recent related publications 41
List of National Coordinators 44
Instructions on how to fill in the *Quarterly Aquatic Animal Disease Report* 48

Foreword

AHPND Update

New and improved PCR method for detection of AHPND bacteria

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Background

Here we describe a new method for detecting isolates of *Vibrio parahaemolyticus* that cause acute hepatopancreatic necrosis disease (AHPND). This method is based on the gene sequence of a protein discovered in a sub-fraction of cell-free culture broth from isoaltes of *V. parhaemolyticus* that cause AHPND, but not from *V. parahaemolyticus* or other bacteria that do not cause AHPND. This cell-free preparation caused the typical signs of acute AHPND (massive sloughing of hepatopancreatic tubule epithelial cells) when administered to shrimp by reverse gavage. It contained two prominent protein bands of 58 and 12 kDa. After mass spectrometery of peptide fragments derived separately from these proteins and after subsequent analysis by MASCOT, it was revealed that they had significant homology to bacterial toxins against insects. Primers were designed to amplify the complete gene sequences for these proteins from AHPND bacteria. After sequencing of the resulting amplicons, primers were designed for PCR methods to detect each of these protein genes, and preliminary tests with a few isolates of AHPND and non-AHPND bacterial isolates revealed that both methods gave positive results for all the AHPND isolates but that the 58 kDa protein alone also gave positive results for some non-AHPND isolates. Thus, further tests were carried out using the PCR method for the 12 kDa protein only. The 98 bacterial isolates tested consisted of non-AHPND (35) and AHPND (49) *V. parahaemolyticus* isolates (total 84) confirmed by bioassay and 14 other isolates of bacteria commonly found in shrimp ponds including other species of *Vibrio* and *Photobacterium*. Results for all 49 AHPND isolates were positive with the test while results for all the remaining isolates were negative. This gave 100% sensitivity, specificity, positive predictive value and negative predictive value for the new method when compared to 100% sensitivity, 97.7% specificity, 97.4% positive predictive value and 100% negative predictive value for the previously recommended AP2 PCR method that was evaluated using a similar set of 80 bacterial isolates. The isolate that gave a false positive test result in the test with the AP2 method was included in the test of the new method and it gave a correct, negative test result.

From these results, we recommend that our previously announced AP1 and AP2 primer methods be replaced with this new method which, for convenience, we would like to call the AP3 primer method. We would also like to suggest caution in calling the 12 kDa protein a toxin, since toxicity assays of its heterologously expressed form have not been completed. Nor have they been done with the 58 kDa protein. Even though these two proteins give dominant bands in the bioactive culture broth fraction from AHPND bacteria, and even though they have similarity to previously reported insect toxins, they may or may not be responsible for massive cell sloughing characteristic of AHPND. Despite this uncertainty, the utility of the AP3 method has been shown to be superior that of AP2 and, as before, we would like the tools for detection of AHPND bacteria be freely dispersed and applied as soon as possible in an effort to control the spread of this new disease.

The sequence of the AP3 primer target plus the primers and PCR protocol are given freely below for application in detecting AHPND bacteria. For those who have previously identified *V. parahaemolyticus* isolates that give positive PCR test results with the AP2 method but have not yet carried out bioassays with shrimp, we recommend additional testing with AP3 method before doing so. As previously recommended for the AP2 method, we do not recommend adaptation of this method to nested PCR. The 1-step PCR method is sensitive enough with DNA extracts from bacterial isolates. However, for samples from shrimp tissues such as the HP and stomach, from broodstock or juvenile shrimp feces, from whole post larvae and other suspected carriers and from environmental sources such as pond sediment, we recommend a preliminary enrichment step in TSB containing 1.5% NaCl supplement incubated for 4 hr at around 30^{o}C with shaking. After this, let any debris settle and then remove the cloudy supernatant, centrifuge to pellet the bacteria and discard the supernatant solution. Extract DNA from the bacterial pellet and use about 100 ng of template for each PCR test.

Details of the PCR method

PCR primers

AP3	5'-3'	Length	%GC	Tm	Ta	Expected amplicon
F	ATGAGTAACAATATAAAACATGAAAC	26	23.08	57.63	53	336 bp
R	GTGGTAATAGATTGTACAGAA	21	33.33	55.46		

PCR reaction conditions

Components	µl		Protocol	
10x PCR mix	2.5		Denature	94°C, 5 min
50 mM $MgCl_2$	0.7		30 cycles	
			Denature	94°C, 30 sec

10 mM dNTPs	0.4		Annealing	53°C, 30 sec
10 µM CN2-F1	0.5		Extension	72°C, 40 sec
10 µM CN2-R1	0.5		Final	72°C, 5 min
Taq DNA pol	0.2			
Total	**25.0**			

>AP3 target sequence 336 bp
ATGAGTAACAATATAAAACATGAAACTGACTATTCTCACGATTGGACTGTCGAACC
AAACGGAG
GCGTCACAGAAGTAGACAGCAAACATACACCTATCATCCCGGAAGTCGGTCGTAGT
GTAGACAT
TGAGAATACGGGACGTGGGGAGCTTACCATTCAATACCAATGGGGTGCGCCATTTA
TGGCTGGC
GGCTGGAAAGTGGCTAAATCACATGTGGTACAACGTGATGAAACTTACCATTTACA
ACGCCCTG
ATAATGCATTCTATCATCAGCGTATTGTTGTAATTAACAATGGCGCTAGTCGTGGTTT
CTGTAC
AATCTATTACCAC

Acknowledgements
This PCR method and the underlying proteomic work was developed entirely by Thai scientists working and Thailand at Centex Shrimp and the Aquatic Animal Health Research Center. It was also supported entirely by research funding from Thailand. The work took place after the groundbreaking publication of Tran, Nunan, Redman, Mohney, Pantoja, Fitzsimmons and Lightner (Dis Aquat Org 105: 45-55) in early 2013. However, it also employed information and materials acquired long before that. Thus, we would like to acknowledge the support and encouragement for our research on AHPND from the Agriculture Research and Development Agency, the National Research Council of Thailand, the Thai Commission for Higher Education, Mahidol University, the National Science and Technology Development Agency, the Patani Shrimp Farmers Club, the Surathani Shrimp Farmers Club, the Thai Frozen Foods Association, Charoen Pokphand Company, SyAqua Co. Ltd. and Thai Union Co. Ltd.

Reports Received by the NACA Secretariat

Country: AUSTRALIA Period: January - March 2014

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	-(2012)	-(2012)	-(2012)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-(2013)	-(2013)	-(2013)		2
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Infection with Koi herpesvirus (KHV)	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-(2013)	+	+	III	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*	-(2013)	-(2013)	-(2013)		5
3. Infection with abalone herpesvirus	-(2011)	-(2011)	-(2011)		6
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with ostereid herpesvirus*	+	+	-(2014)	III	7
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	0000	0000	0000		
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-(2008)	-(2008)	+	III	8
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		9
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		10
2. Infection with *Batrachochytrium dendrobatidis*	-(2013)	-(2013)	-(2013)		11
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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 despite passive surveillance in Victoria (last reported 2012), the Australian Capital Territory (last reported 2011), New South Wales (last reported 2009) and South Australia (last reported 1992). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Western Australia.
2	**Infection with *Aphanomyces invadans* (EUS)** was not reported this period despite passive surveillance in Western Australia (last reported 2013), Queensland (last reported 2013), New South Wales (last reported 2012), the Northern Territory (last reported 2012), Victoria (last reported 2012), and South Australia (last reported 2008). Passive surveillance and never reported in Tasmania. No information available in the Australian Capital Territory.

3	**Viral encephalopathy and retinopathy** 1. **Reported in Queensland** in February and March, passive surveillance; 2. **Species affected** –gold spot grouper fingerlings (*Epinephelus coioides*), Queensland grouper fingerlings (*Epinephelus lanceolatus*), and barramundi fingerlings (*Lates calcarifer*); 3. **Clinical signs** – lethargy, swimming on sides, mortality; 4. **Pathogen** – *Betanodavirus*; 5. **Mortality rate** – <1%; typical pathology seen in 80% of *Lates calcarifer* fingerlings observed in one case, 6. **Economic loss** – N/A; 7. **Geographic extent** – Limited to aquaculture facilities; 8. **Containment measures** – Not applicable; 9. **Laboratory confirmation** – Histopathology, real time PCR; 10. **Publications** – None. Viral encephalopathy and retinopathy is know to have occurred previously in the Northern Territory (last reported 2013), New South Wales (last reported 2010), South Australia (last reported 2010) and Tasmania (last reported 2000). Passive surveillance and never reported in Victoria. No information available in the Australian Capital Territory.
4	**Enteric septicaemia of catfish** was not reported this period and has never been reported from wild fish in Australia. Passive surveillance and reported previously in the Northern Territory in a closed aquarium facility also holding imported ornamental fish (last reported 2011). Passive surveillance and reported previously in Queensland (last reported 2008) and Tasmania (last reported 2001) in imported zebrafish (*Brachydanio rerio*) held in PC2 containment facilities. Passive surveillance and never reported in New South Wales, South Australia, Victoria or Western Australia. No information available this period in the Australian Capital Territory.
5	**Infection with *Perkinsus olseni*** was not reported this quarter despite passive surveillance in South Australia (last reported 2013) and New South Wales (last reported 2005). Not reported despite targeted surveillance in Western Australia (last reported 2003). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Victoria. No information available for the Australian Capital Territory (suceptible species not present and no marine water responsibility).
6	**Infection with abalone herpesvirus (abalone viral ganglioneuritis)** was not reported this period despite targeted surveillance in Tasmania (last reported 2011) and passive surveillance in New South Wales (last reported 2011 and eradicated following detection in contained commercial live-holding facilities), and Victoria (last reported 2010). Passive surveillance and never reported in the Northern Territory, Queensland, South Australia and Western Australia. No information available this period for the Australian Capital Territory (no marine water responsibility).

7	**Infection wit Ostereid herpesvirus** 1. **Reported in New South Wales** in January and February, passive surveillance; 2. **Species affected** – *Crassostrea gigas*, including stock over one year old; 3. **Clinical signs** – N/A; 4. **Pathogen** – Ostereid herpesvirus-1 microvariant; 5. **Mortality rate** – 30-80%; 6. **Economic loss** – N/A; 7. **Geographic extent** – January case in Hawkesbury River; February case in Georges River; 8. **Containment measures** – Movement of stock and equipement outside of currently infected catchments prohibited; 9. **Laboratory confirmation** – PCR; 10. **Publications** – None. Controls are in place to contain the virus to affected estuaries in New South Wales. Ostereid herpesvirus-1 µ variant has not been detected in any other jurisdiction in Australia. Targeted surveillance in 2011 in pacific oyster growing areas did return positive tests for the virus. Passive surveillance and never reported in Northern Territory, Queensland, Victoria, Tasmania, South Australia and Western Australia. No information available for Australian Capital Territory (no marine water responsibility).
8	**Infectious hypodermal and haematopoietic necrosis** 1. **Reported in Queensland** in March, targeted surveillance; 2. **Species affected** – *Penaeus monodon* adults; 3. **Clinical signs** – none (health testing); 4. **Pathogen** – Infectious hypodermal and haematopoietic virus; 5. **Mortality rate** – N/A; 6. **Economic loss** – nil; 7. **Geographic extent** – Queensland east coast; 8. **Containment measures** – N/A; 9. **Laboratory confirmation** – real time PCR; 10. **Publications** – None.
8 (contd..)	Infectious hypodermal and haematopoietic necrosis virus is known to have previously occurred in the Northern Territory (last reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available this period in the Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present).
9	**White tail disease** was not reported this period despite passive surveillance in Queensland (last reported 2008). Passive surveillance and never reported from the Australian Capital Territory, New South Wales, the Northern Territory, South Australia, Victoria and Western Australia. No information available this period in Tasmania (susceptible species not present).
10	**Infection with ranavirus** was not reported this period despite passive surveillance in the Northern Territory (last reported 2008, prior to official reporting for ranavirus). Suspected but not confirmed through 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.

11	**Infection with *Batrachochytrium dendrobatidis*** was not reported this period despite targeted surveillance in Tasmania (last reported 2013), passive surveillance in Victoria (last reported 2011) and Western Australia (last reported 2008). Suspected but not confirmed through passive surveillance in Queensland. No information available this period in the Australian Capital Territory, New South Wales, the Northern Territory, and South Australia.

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

The AQUAVETPLAN disease strategy manual for shite spot disease has been revised and was published in January 2014. The manual is available at http://www.daff.gov.au/animal-plant-health/aquatic/aquavetpla/white-spot

Country: HONG KONG SAR **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp (SVC)	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000	III	
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000	III	
6. Red seabream iridoviral disease (RSID)	-	-	-	III	
7. Infection with Koi herpesvirus (KHV)	-	+	-	III	1
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 herpesvirus	0000	0000	0000	II	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	II	
5. Infection with ostereid herpesvirus*	***	***	***		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
7. Acute viral necrosis (in scallops)	0000	0000	0000	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000	III	
2. White spot disease (WSD)	-	-	-	III	
3. Yellowhead disease (YHD)	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000	II	
5. Infectious myonecrosis (IMN)	0000	0000	0000	II	
6. White tail disease (MrNV)	0000	0000	0000	II	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	II	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	II	
9. Acute hepatopancreatic necrosis disease (AHPND)	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.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	Koi herpesvirus was detected from three koi carp with haemorrhagic lesion, which were submitted for disease diagnosis.
2	
3	

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

Country: INDIA **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Infection with Koi herpesvirus (KHV)	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	+( )	***	***	III	1
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 herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with ostereid herpesvirus*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	+( )	+( )	+( )	I,III	2,3
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	***	***	+( )	III	4
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	-	-		
9. Acute hepatopancreatic necrosis disease (AHPND)	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.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	**Viral encephalopathy and retinopathy:** Detected in asymptomatic tilapia (*Oreochromis mossambicus*) from Ernakulum Distrit of Kerala on the basis of level III diagnosis.
2	**White spot disease (WSD):** WSSV was detected in *P. monodon* and *L. vannamei* samples from very limited areas in West Godovari and Vijayawada districts of Andhra Pradesh, Udupi district of Karnataka, Thane and Raigad districts of Maharashtra, and Nagapattinam, Cuddalore, Thanjabur and Thirivarur districts of Tamil Nadu, during different months under the reporting period. Level III diagnosis.
3	WSSV was also detected from *P. monodon* and *P. indicus* samples from Ernakulum and Alleppey districts of Kerala using level I and III diagnosis.
4	IHHNV was detected in *P. monodon* samples from Pavoor Block of Ernakulum district of Kerala and in *L. vannamei* samples from Kanchipuram and Thiruvallur districts of Tamil Nadu. Level III diagnosis.

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

The Prevention and Control of Infectious and Contagious Diseases in Animals Act 2009 has been suitably amended to cover aquatic animal diseases vide the Government of India Notifications No. S.O. 995(E) and No. S.O. 996(E) dated 1 April 2014.

Country: INDONESIA **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Infection with Koi herpesvirus (KHV)	***	+( )	***	III	1
Non OIE-listed diseases					
8. Grouper iridoviral disease	+( )	+( )	***	III	2
9. Viral encephalopathy and retinopathy	+( )	+( )	***	III	3
10.Enteric septicaemia of catfish	***	+( )	***	III	4
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 herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with ostereid herpesvirus*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	***	+( )	0000	III	5
2. White spot disease (WSD)	+( )	+( )	+( )	III	6
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	***	***	***		
5. Infectious myonecrosis (IMN)	+( )	+( )	***	III	7
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Acute hepatopancreatic necrosis disease (AHPND)	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.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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. **Origin of the disease/pathogen:** Banjar and Tabal;ng (South Kalimantan Province) 2. **Species affected:** *Cyprinus carpio* 3. **Clinical signs:** gill rot, red spot on body surface, loss of appetite, wounds; 4. **Pathogen:** Koi herpesvirus, multi-infection with *Aeromonas hydrophila* and *Benedenia* sp. 5. **Mortality rate:** >70%; 6. **Economic loss:** Rp 15 million; 7. **Names of infected areas:** Banjar, Hulu Sungai Utara, Amuntai (South Kalimantan Province) 8. **Preventive/control measures:** -; 9. **Laboratory confirmation:** Freshwater Aquaculture Development Center Mandiangin Laboratory. 10. **Publications :** not published.
2	**GIV** 1. **Origin of the disease/pathogen:** Backyard Situbondo (East Java Province), Pesawaran (Lampung Province), Teluk Akas (West Nusatenggara Province); 2. **Species affected:** *Chromileptes altivelis* (Situbondo and West Nusatenggara); *Cromileptes altivelis* and *Lates calcarifer* (Lampung); 3. **Clinical signs:** lethargic swimming, rapid opercular movement, dashing to the surface for air, darkened body color, pale gills and enlarged spleen (West Nusatenggara); 4. **Pathogen:** Ranavirus, Iridovirus; 5. **Mortality rate:** 30-50% (West Nusatenggara); 6. **Economic loss:** Rp 3.5-8 million (West Nusatenggara); 7. **Names of infected areas:** Hatchery Lombok (MDC), Teluk Akas (West Nusatenggara), Pesawaran (Lampung) 8. **Preventive/control measures:** Vitamins, quarantine , water treatment and good feed management; 9. **Laboratory confirmation:** Main Center Mariculture Development Center Lampung Laboratory, Mariculture Development Center Lombok Laboratory, Brackishwater Aquaculture Development Center Situbondo Laboratory; 10. **Publications:** not published.

3	**VER** 1. **Origin of the disease/pathogen:** Maluku Province, Situbondo (East Java Province), Lhokseumawe (Aceh Province), Jepara (Central Java Province), Sekotong Lombok MADC (West Nusatenggara Province); 2. **Species affected:** *Chromileptes altivelis* (Maluku, East Java and Central Java) 3. **Clinical signs:** dark body coloration abnormal swimming (Maluku, East Java and Aceh), erratic swimming (spiral, whirling or belly-up) and vacuolation of the central nervous tissue. Usually, there is also vacuolation of nuclear layers of retina (Central Java); 4. **Pathogen:** VNN (Ambon and Aceh), NNV (Situbondo), *Betanodavirus* RGNNV (West Nusatenggara); 5. **Mortality rate:** >70% (Maluku and Central Java), <30% (East Java and West Nusatenggara); 6. **Economic loss:** Rp 10 million (Maluku), Rp 5 million (West Nusatenggara) 7. **Names of infected areas:** Nursery pond (Mariculture Development Center Maluku), Situbondo (East Java), Lhokseumawe (Aceh), Jepara (Central Java); 8. **Preventive/control measures:** Eradication (Ambon), Biosecurity (Situbondo and Jepara), early harvest (Aceh); 9. **Laboratory confirmation:** Mariculture Development Center Ambon Laboratory, Brackishwater Aquaculture Development Center Situbondo Laboratory, Center for Disease and Environment Investigation Banten Laboratory, Brakishwater Aquaculture Development Center Ujung Batee Aceh Laboraotry, Main Center Brackishwater Aquaculture Development Jepara Laboratory, and Mariculture Development Center Lombok Laboratory; 10. **Publications:** not published.
4	**Enteric Septicaemia of Catfish** 1. **Origin of the disease/pathogen:** fingerling of *Pangasius* sp. from Bogor (West Java Province) and Palangkaraya Town (Central Kalimantan Province); 2. **Species affected:** *Pangasius sp.* 3. **Clinical signs:** Red spots, white spots on kidney and other internal organs, swimming on the surface 4. **Pathogen:** *Edwardsiella ictaluri*; 5. **Mortality rate:** <30%; 6. **Economic loss:** >Rp5 million 7. **Names of infected areas:** Palangkaraya (Central Kalimantan Province); 8. **Preventive/control measures:** Vitaminc C supplementation 9. **Laboratory confirmation:** Freshwater Aquaculture Development Center Mandiangin Laboratory; 10. **Publications:** not published.
5	**TS** 1. **Origin of the disease/pathogen:** Situbondo (East Java Province); 2. **Species affected:** *L. vannamei;* 3. **Clinical signs: -** 4. **Pathogen:** Taura syndrome virus; 5. **Mortality rate:** <30%; 6. **Economic loss: -** 7. **Names of infected areas:** Situbondo (East Java Province); 8. **Preventive/control measures:** Biosecurity; 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Situbondo Laboratory, Center for Disease and Environment Investigation Banten Laboratory; 10. **Publications:** not published.

6	**WSD** 1. **Origin of the disease/pathogen:** Situbondo (East Java Province), Tegal Arum (Lampung Province), Peurlak East Aceh (Aceh Province), Rembang (Central Java Province); 2. **Species affected:** *Litopenaeus vannamei* (East Java, Lampung, Central Java)*, Penaeus monodon* (Aceh, Central Java) 3. **Clinical signs:** white spots on carapace, weak shrimps, shrimps swimming on the water surface (Central Java); 4. **Pathogen:** WSSV 5. **Mortality rate:** <30% (East Java, >70% (Central Java); 6. **Economic loss:** Rp500,000 (Aceh Province); 7. **Names of infected areas:** Situbondo (East Java Province), Tegal Arum (Lampung Province), Peurlak East Aceh (Aceh Province), Jepara (Central Java Province); 8. **Preventive/control measures:** Quarantine, Vitamin C supplementation, feed management and environmental improvement (East Java), eradication (Aceh), Vitamin C, immunostimulants, probiotics, biosecurity (Central Java); 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Ujung Batee Aceh Laboratory, Brackishwater Aquaculture Development Center Situbondo Laboratory, Center for Disease and Environment Investigation Banten Laboratory, Main Center Mariculture Development Lampung Laboratory, Main Center Brackishwater Aquaculture Development Jepara Laboratory; 10. **Publications:** not published.
7	**IMN** 1. **Origin of the disease/pathogen:** Situbondo (East Java Province), Kendal, Jepara (Central Java Province), hatchery in Sumbawa (West Nusa Tenggara Province); 2. **Species affected:** *Litopenaeus vannamei* 3. **Clinical signs:** swimming on water surface, loss of appetite, red coloration on the tail (East java); acute phase of the disease: white necrotic areas in striated muscles especially the abdominal and tail parts; can become necrotic and reddemed (Central Java), highly pigmented exoskeleton (West Nusa Tenggara); 4. **Pathogen:** IMNV 5. **Mortality rate:** <30% (East Java and West Nusa Tenggara), >50% (Centra Java); 6. **Economic loss:** Rp 5 million (West Nusa Tenggara) 7. **Names of infected areas:** Situbondo (East Java Province), Kendal, Jepara (Central Java Province), Sumbawa Regency (West Nusa Tenggara Province); 8. **Preventive/control measures:** Biosecurity, vitamin C, probiotics, water management, use of SPF for IMNV seeds; 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Situbondo Laboratory, Center of Fish Diseases and Environment Investigation Banten Laboratory, Main Center Brackishwater Aquaculture Development Jepara Labortory, Mariculture Development Center Lombok Laboratory; 10. **Publications:** not published.

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

Country: IRAN **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	-	-	-		
3. Spring viraemia of carp (SVC)	-	-	-		
4. Viral haemorrhagic septicaemia (VHS)	+	+	+	III	1
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Infection with Koi herpesvirus (KHV)	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*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpesvirus	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	-	-	-		
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000		
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	**VHS** reported in some provinces, 3 fish cuture farms in Chahar Mahal Bakhtiari, 2 farms in Lorestan, 1 farm in Kordestan. 1. **Origin of the disease:** unknown but under study; 2. **Species affected** – *Onchorrhyncus mykiss* (Rainbow trout), 2-3 months old; 3. **Clinical signs** –pinpoint haemorrhages in fatty tissue, pale gills, swollen abdomen, exophthalmia, bleeding under the skin around the the base of pectoral and pelvic fins; 4. **Pathogen** – VHSV; 5. **Mortality rate** – >70% (morbidity almost 20-30%), 6. **Economic loss** – 7. **Geographic extent** – Kordestan, Chahar Mahal Bakhtiari and Lorestan; 8. **Control measures** – all affected farms were disinfected with quaternary ammonia (10 ppm); all fish were eradicated; 9. **Laboratory confirmation** – Real-time and nested PCR, ELISA, histopathology; confirmed by Centre of Veterinary Laboratory (CVL) and Mashhad PCR Lab; 10. **Publications** – None.

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

Country: JAPAN **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	III	
3. Spring viraemia of carp (SVC)	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia (VHS)	+	+	+	III	
5. Infection with *Aphanomyces invadans* (EUS)	-(2013)	-(2013)	-(2013)	I	
6. Red seabream iridoviral disease (RSID)	-(2013)	-(2013)	-(2013)	I	
7. Infection with Koi herpesvirus (KHV)	-(2013)	-(2013)	-(2013)	I	
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000	I	
9. Viral encephalopathy and retinopathy	+	+	-(2014)	III	
10.Enteric septicaemia of catfish	- (2010)	-(2010)	-(2010)	I	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	I	
2. Infection with *Perkinsus olseni*	- (2007)	-(2007)	-(2007)	I	
3. Infection with abalone herpesvirus	0000	0000	0000	I	
4. Infection with *Xenohaliotis californiensis*	-(2013)	-(2013)	-(2013)	I	
5. Infection with ostereid herpesvirus*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	+	+	+	II	
7. Acute viral necrosis (in scallops)	0000	0000	0000	I	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000	I	
2. White spot disease (WSD)	-(2013)	-(2013)	-(2013)	I	
3. Yellowhead disease (YHD)	0000	0000	0000	I	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000	I	
5. Infectious myonecrosis (IMN)	0000	0000	0000	I	
6. White tail disease (MrNV)	0000	0000	0000	I	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	I	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	I	
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	I	
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2012)	-(2012)	-(2012)	I	
2. Infection with *Batrachochytrium dendrobatidis*	-(2009)	-(2009)	-(2009)	I	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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: LAO PDR **Period: January - March 2014**

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 (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Infection with Koi herpesvirus (KHV)	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*	0000	0000	0000		
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with ostereid herpesvirus*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases	0000	0000	0000		
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	0000	0000	0000		
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000		
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Acute hepatopancreatic necrosis disease (AHPND)	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.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
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 (SVC)	0000	0000	0000	I,II,III	1
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000	I,II,III	
5. Infection with *Aphanomyces invadans* (EUS)	(1986)	(1986)	(1986)	I.II	
6. Red seabream iridoviral disease (RSID)	-	-	-	I,II,III	
7. Infection with Koi herpesvirus (KHV)	+	+	-	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	III	
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*					
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	-	-	-	I,III	5
2. White spot disease (WSD)	+	-	+	I,III	6
3. Yellowhead disease (YHD)	-	-	-	I,III	7
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	-	-	I,III	8
5. Infectious myonecrosis (IMN)	-	-	-	III	9
6. White tail disease (MrNV)	-	-	-	III	10
7. Necrotising hepatopancreatitis (NHP)	-	-	-	III	11
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	-	-		
9. Acute hepatopancreatic necrosis disease (AHPND)	-	-	+	I,II,III	12
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Hepatopancreatic parvovirus disease	-	+	-	III	13
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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) during DoF active surveillance programme.
2	**Koi herpesvirus disease** 1. One (1) positive case was detected (PCR) during DoF active surveillance programme in January. 2. Two (2) positive cases were detected (PCR) from fish disease notification from importation of koi fish in importer's premise in February.
3	**Grouper Iridoviral disease (GIV)** 1. No positive cases were reported.
4	**Viral encephalopathy and retinopathy** 1. No positive cases detected (PCR) during DoF active surveillance programme.
5	**Taura syndrome virus (TSV)** 1. No positive cases detected (PCR) during DoF active surveillance programme and monitoring programme by private laboratory.

6	**White Spot Syndrome Virus (WSSV)** 1. Two (2) positive cases were detected (PCR) from fish disease notification by DoF laboratory analysis
7	**Yellow head disease (YHV)** (*P. monodon, Litopenaeus vannamei*) 1. No positive cases detected (PCR) during DoF active surveillance programme and monitoring programme by private laboratory.
8	**Infectious hypodermal and haematopoietic necrosis virus (IHHNV)** (*Macrobrachium rosenbergii*, *P. monodon, Litopenaeus vannamei*) 1. No positive cases detected (PCR) during DoF active surveillance programme and monitoring programme by private laboratory.
9	**Infectious Myonecrosis (IMNV)** 1. No positive cases detected (PCR) during DoF active surveillance programme and monitoring programme by private laboratory.
10	***Macrobrachium rosenbergii* Nodavirus (MrNV)** 1. No samples were tested for MrNV.
11	**Necrotising hepatopancreatitis (NHP)** 1. No samples were tested for NHPB.
12	**Acute hepatopancreatic necrosis disease (AHPND)** 1. One (1) positive case was reported (PCR) during monitoring programme by Private Laboratory.
13	**Hepatopancreatic parvo virus disease (HPV) (*P. monodon*)** 1. One (1) positive case was reported (PCR) during monitoring programme by Private Laboratory.

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

Country: MYANMAR **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Infection with Koi herpesvirus (KHV)					
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 herpesvirus					
4. Infection with *Xenohaliotis californiensis*					
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*					
7. Acute viral necrosis (in scallops)					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	-	-	-	III	1
2. White spot disease (WSD)	-	-	-	III	
3. Yellowhead disease (YHD)	-	-	-	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	-	-	III	
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					
2. Infection with *Batrachochytrium dendrobatidis*					
ANY OTHER DISEASES OF IMPORTANCE					
1. Parasitic disease					2
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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 9 samples of shrimps (8 frozen and 1 live shrimps and soft-shelled crabs for export) for testing for TSV, WSSV and IHHNV. All samples were found negative for the viruses.
2	Visited some fish farms in Yangon and Ayeyarwaddy regions during this period. Parasitic infestations (*Ergasilus* spp., *Dactylogyrus* spp. and *Trichodina* spp.) were found due to poor water quality.
3	

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

Country: NEPAL **Period: October - December 2013**

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 (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-	I	
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Infection with Koi herpesvirus (KHV)	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*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpesvirus	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	***	***	***		
2. White spot disease (WSD)	***	***	***		
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	***	***	***		
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-(2002)	-(2002)	-(2002)	I	1
6. Red seabream iridoviral disease (RSID)	***	***	***	III	2
7. Infection with Koi herpesvirus (KHV)	0000	0000	0000	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-(2008)	-(2008)	-(2008)	III	
9. Viral encephalopathy and retinopathy	+	-	+	III	3
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 herpesvirus	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000	III	4
2. White spot disease (WSD)	+	+	+	III	5
3. Yellowhead disease (YHD)	-(1999)	-(1999)	-(1999)	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+	+	+	III	6
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	7
6. White tail disease (MrNV)	0000	0000	0000	III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	?	?	?	II	8
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	Sixty (60) samples of *Anguilla spp.* were negative for Infection with *Aphanomyces invadans* (EUS) by gross morphological examination. Samples were from Bicol and Laguna. Examination was conducted by the Bureau of Fisheries and Aquatic Resources (BFAR) Central Office Fish Health Laboratory.
2	Three (3) samples- (1 *L.calcarifer,* 1 *T.blochii* and 1 *L.argentimaculatus*) were analyzed using PCR test. All samples were negative for Red Seabream Iridoviral Disease. Samples were collected from Sarangani Province. Examination was conducted by SEAFDEC/AQD Laboratory.
3	Ten (10) samples- (2 *E.fuscoguttatus,* 5 *S.guttatus,* 1 *L.calcarifer,* 1 *T.blochii,* 1 *L.argentimaculatus*) were analyzed using PCR test. Three (1 *L.calcarifer,* 1 *E.fuscoguttatus* and 1 *S.guttatus*) showed positive results for Viral Encephalopathy and Retinopathy. The positive samples were collected from Sarangani Province and Iloilo. Examination was conducted by Southeast Asian Fisheries and Development Center / Aquaculture Department (SEAFDEC/AQD) Laboratory.
4	Twenty four (24) samples-(20 *P.*vannamei and 4 *P.monodon*) of different stages (broodstock, adult, fry and juvenile) were analyzed using PCR test. All samples showed negative results for Taura Syndrome. The samples were collected from Bohol and Cebu. Examination was conducted by SEAFDEC/AQD Laboratory.

5	Five hundred (500) samples of *P.vannamei, P.monodon, S.serrata, Metapaneaus spp.,M.rosenbergii,* wild shrimps and crabs of different stages (fry, juvenile, adult and brood stock) were tested using PCR. One hundred three (45 *P.*vannamei, 21 *P.monodon* and 2 *Metapenaeus spp.,* 7 *M.rosenbergii,* 11 shrimp and 17 crabs) were positive for White Spot Syndrome Virus. The positive samples were from Sarangani, General Santos City, Paranaque City, Zambales, Ilocos, Zamboanga City, Negros Occidental, Negros Oriental, Surigao del Sur, Davao del Sur, Masbate, Iloilo, Aklan, Cebu, Capiz, Agusan del Norte, Maguindanao and Bataan. Examinations were conducted by BFAR Central Office, SEAFDEC/AQD and Negros Prawn Producers Cooperative (NPPC) Laboratories.
6	One hundred fifty (150) samples of *P.vannamei, P.monodon,Metapaneaus spp., M.rosenbergii* and wild shrimp of different stages (broodstock, adult, fry and juvenile) were analyzed using PCR test. Twelve (6 *P.vannamei,* 5 *P.monodon* and 1 *Metapanaeus spp.*) samples showed positive results for Infectious hypodermal and haematopoietic necrosis (IHHN). The samples were collected from Paranaque City, Ilocos Norte, Surigao del Sur, Zamboanga City, Agusan del Norte and Maguindanao. Examination was conducted by BFAR Central Office and SEAFDEC/AQD Laboratories.
7	Thirty three (33) samples-(29 *P.*vannamei and 4 *P.monodon*) of different stages (broodstock, adult, fry and juvenile) were analyzed using PCR test. All samples showed negative results for Infectious myonecrosis (IMNV). The samples were collected from Bohol and Cebu. Examination was conducted by SEAFDEC/AQD Laboratory.
8	*P. vannamei* (five pieces) from grow-out pond fixed in Davidson's and sent to the laboratory of Dr. D.V. Lightner was examined histologically. Two shrimp out of five examined presented with heapatopancreas lesions reminiscent of those observed of AHPND/EMS. Due to marginal fixation and lack of parallel samples fixed in 95% ethanol for second confirmatory test the disease could not be confirmed. Other *P. vannamei* samples from grow-out pond (64 days of culture) fixed in Davidson's fixative submitted by shrimp grower to BFAR Fish Health laboratory and sent to Dr. D.V. Lightner was examined histologically, showed signs/possible terminal stage of AHPND. Due to harvest, no available samples were fixed in 95% ethanol for PCR test. Sample collection by BFAR in shrimp producing areas is on-going for bacteriological, histological and PCR examinations.
9	Sixty (60) samples of *Anguilla spp.* were negative for Infection with *Aphanomyces invadans* (EUS) by gross morphological examination. Samples were from Bicol and Laguna. Examination was conducted by the Bureau of Fisheries and Aquatic Resources (BFAR) Central Office Fish Health Laboratory.

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

Country: SINGAPORE Period: January - March 2014

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	+	+	+	III	1
7. Infection with Koi herpesvirus (KHV)	(2012)	(2012)	(2012)	III	2
Non OIE-listed diseases					
8. Grouper iridoviral disease	+	+	(2014)	III	3
9. Viral encephalopathy and retinopathy	+	+	+	III	4
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpesvirus	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	(2013)	(2013)	(2013)	III	5
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000		
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	+	(2014)	(2014)	III	6
ANY OTHER DISEASES OF IMPORTANCE					
1. Infectious spleen and kidney necrosis virus (ISKNV) (marine and ornamental fish)	+	+	(2014)	III	3
2. *Aeromonas salmonicida* (in goldfish)	0000	0000	0000	III	7

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	**Red seabream iridovirus (RSIV)** was detected by qPCR and histopathology in five different batches of seabass fingerlings from a land-based seabass nursery. RSIV was last detected in fish from the nursery in June 2013. The fish had been imported every month between November 2013 and March 2014, and co-infection with Big Belly pathogen was observed in earlier batches. Fish with white faecal casts, swollen abdomen and gut necrosis was seen in all five batches. In addition to the vaccination of clinically healthy fish, the nursery has implemented additional animal husbandry and management control measures so as to control RSIVD. RSIV has not been detected in farmed marine fish from other farming sites in Singapore.
2	**Koi herpesvirus (KHV)** was not detected in 50 batches of ornamental koi his quarter by qPCR. Fish tested were from surveillance programs on imported and locally farmed ornamental fish.
3	**Infectious Spleen and Kidney Necrosis Virus (ISKNV)** was detected by qPCR and histopathology in a batch of diseased hybrid groupers from a local land-based nursery. The fish had been imported on 4 Nvember 2013 and had ulcerated bodies, enlarged spleens, pale kidneys and pus in the abdominal cavity. Infection with Viral nervous necrosis virus (VNNV) was confirmed by histopathological findings and PCR in these fish (see comment 4). *Vibrio* spp., *Shewanella putrefaciens* and *Photobacterium damselae* were isolated from the fish.

4	**Viral nervous necrosis virus (VNNV)** was detected in a batch of diseased hybrid grouper in January (see comment 3) and a second batch in February. In the same month, VNNV was detected in 4 out of 17 batches of marine fish from coastal fish farms in the west and east Johore Straits, submitted following a fish kill event which started in 8 February. This resulted in estimated mortalities of more than 50% of standing fish stocks for all farms. The main species of fish affected by the fish kill were grouper varieties, Asian seabass and giant trevally. Pathology in the gills, kidney and intestines were observed in the grouper and seabass examined. VNNV was also detected by PCR and histopathology in one batch of coral trout in March 2014. The fish had been imported in November 2013, weighed 70 g and the farm had experienced 100% mortality in its stock.
5	**White spot syndrome virus (WSSV)** was not detected by qPCR in 28 batches of ornamental crustaceans submitted from targeted surveillance program, and in approximately 141 *L. vannamei* submitted from a local broodstock farm.
6	222 samples of frog skin swabs (both pooled and individual) submitted between 4 June 2013 and 22 April 2014 were tested for ***Batrachochytrium dendrobatidis*** **(Bd)** testing by qPCR (Hyatt et al., 2007). Samples were submitted from a zoological collection, and 5 local from farms and traders. Bd DNA was detected in 59 samples by qPCR, and was not detected in 162 samples. Indeterminate result was obtained from 1 sample. Samples which Bd DNA was detected were obtained from bullfrogs that were imported for huan consumption. Bd was not detected in samples from locally farmed bullfrogs.
7	***Aeromonas salmonicida*** was not detected this quarter in 13 batches of goldfish submitted under a targeted surveillance program for goldfish exported to Australia.

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

Country: SRI LANKA Period: January - March 2014

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***	III	
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	0000	0000	0000	III	1
4. Viral haemorrhagic septicaemia (VHS)	***	***	***	III	
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Infection with Koi herpesvirus (KHV)	0000	0000	0000	III	2
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 herpesvirus	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with ostereid herpesvirus*	***	***	***		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	***	***	***		
2. White spot disease (WSD)	+( )	+( )	+( )	III	3
3. Yellowhead disease (YHD)	?( )	?( )	?( )	III	4
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	?( )	?( )	?( )	III	5
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Laem Singh virus (LSV)	?( )	?( )	?( )	III	6
2. Monodon Baculovirus (MBV)	?( )	?( )	?( )	III	7

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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 42 export and import samples (19 guppy, 7 Koi carp, 13 carp, and 3 molly) were tested at Veterinary Research Institute (VRI), and all the samples gave negative reaction for SVC.
2	Testing for KHV among export and import samples (21 carps and 5 guppies) have been carried out in VRI and Center for Aquatic Disease Diagnosis and Research (CADDAR); all samples were found negative.
3	During this quarter, a total of 568 out of 998 samples of *P. monodon* gave positive results for WSSV by PCR. Testing has been carried out in the laboratories of NARA and NAQDA.
4	24 samples of *P. monodon* have been tested for YHV in the laboratory of NARA, and all samples gave negative results.
5	24 samples of *P. monodon* have been tested for IHHNV in the laboratory of NARA, and all samples gave negative results.
6	24 samples of *P. monodon* have been tested for LSV in the laboratory of NARA, and all samples gave negative results.
7	40 samples of *P. monodon* have been tested for MBV in the laboratory of NARA and NAQDA, and all samples gave negative results.

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

Country: THAILAND **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp (SVC)	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000	III	
5. Infection with *Aphanomyces invadans* (EUS)	(2009)	(2009)	(2009)	II	
6. Red seabream iridoviral disease (RSID)	0000	0000	0000	III	
7. Infection with Koi herpesvirus (KHV)	(2011)	(2011)	(2011)	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
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 herpesvirus	0000	0000	0000	II	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	II	
5. Infection with ostereid herpesvirus*	0000	0000	0000	II	
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	-	+	-	III	1
2. White spot disease (WSD)	+()	+()	+()	III	2
3. Yellowhead disease (YHD)	+()	+()	+()	III	3
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+()	+()	+()	III	4
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	-	-	-	III	
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	-	+()	+()	II	5
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(2011)	(2011)	(2011)	III	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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 687 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 3 specimens or 0.44 % recorded as PCR positive or carrying TSV genes. Shrimp farm with positive testing results was subjected to health improvement, movement control, eradication and/or farm disinfection.
2	A total of 729 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 11 specimens or 1.51 % recorded as PCR positive or carrying WSSV genes. Shrimp farms with positive testing results were subjected to health improvement, movement control, eradication and/or farm disinfection.
3	A total of 732 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 21 specimens or 2.87 % recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results were subjected to health improvement, movement control, eradication and/or farm disinfection.
4	A total of 875 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 33 specimens or 3.77 % recorded as PCR positive or carrying IHHNV genes. Shrimp farms with positive testing results were subjected to health improvement, movement control, eradication and/or farm disinfection.
5	A total of 511 shrimp samples from shrimp farms had been tested at Histopathology Laboratories of the DOF under passive surveillance. 9 specimens or 1.76 % recorded as AHPND positive. Shrimp farms with positive testing results were subjected to health improvement, movement control, eradication and/or farm disinfection

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

Country: VIETNAM **Period: January - March 2014**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Infection with Koi herpesvirus (KHV)	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*	-	-	-		
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with ostereid herpesvirus*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	+	+	+	I,III	1
3. Yellowhead disease (YHD)	-	-	+	I, III	2
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000		
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	-	-		
9. Acute hepatopancreatic necrosis disease (AHPND)	+	+	+	I,II	3
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					

* listed as Emerging Disease

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
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	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	**White Spot Disease (WSD)** **Pathogen**: White spot syndrome virus (WSSV) **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei* (11-75 DOC) **Name of affected area:** reported in 17 provinces (total area 3,210 ha) including Hai Phong, Nghe An, Ha Tinh, Quang Tri, Quang Binh, Quang Ngai, Thua Tien Hue, Phu Yen, Binh Dinh, Ho Chi Minh, Tien Gang, Ben Tre, Tra Vinh, Dong Nai, Kien Gang, Soc Trang and Ca Mau. **Mortality rate:** average to high, 100% in some cases within 10 d. **Clinical signs:** lethargic or moribund shrimps aggregated 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; **Control measures:** early harvest, strict isolation of infected ponds from movement, strengthened control of transportation, disinfection of infected ponds using Calcium hypochlorite (chlorine).
2	**Yellowhead Disease (YHD)** **Pathogen**: Yellowhead virus (YHV) **Species affected:** *Litopenaeus vannamei* **Name of affected area:** reported in Quang Tri province with 1.42 ha affected. **Mortality rate:** average to high, 100% in some cases within 10 d. **Clinical signs:** Affected shrimps showed sudden increase in feeding activity and abnormal growth, then loss of appetite; aggregated near the pond surface or at the edge of the ponds followed by mortalities. Body is discolored, cephalothorax/hepatopancreas swollen and turned to color yellow or brown. Tissues of most organs (gills, hepatopancreas, gut epidermis) were necrotic with degenerated cell nuclei. Shrimps were most sucsceptible at the age of 20-70 DOC (no infection in shrimps under 15 DOC). Fastest transmission of the disease was observed in shrimps at 20-30 DOC when mortality could reach 100% over 2-5 days of infection. **Control measures:** Disinfection and discharge of contaminated water; movement and transporatation control,.

2	**Acute Hepatopancreatic Necrosis Diseae (AHPND)** **Pathogen**: *Vibrio parahaemolyticus* with Phage A3 **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei* (15-50 DOC) **Name of affected area:** reported in 11 provinces and caused losses in total shrimp culture area of 673 ha. Affected provinces include Nghe An, Ha Tinh, Quang Tri, Phu Yen, Ho Chi Minh, Tien Giang, Ben Tre, Tra Vinh, Kien Giang, Soc Trang and Ca Mau. **Mortality rate:** Mortality, recorded at 10-45 days post stocking in intensive and semi-intensive farming systems, was as high as 95%. **Clinical signs:** shrimps become lethargic with soft, darkened shells, mottling of the carapace. Pathology appears to be limited to hepatopancreas. **Control measures:** strict isolation of infected ponds from movement and transport controls, disinfection of infected ponds using Calcium hypochlorite (chlorine).

2. New aquatic animal health regulations introduced within past six months (with effective date): None

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Report (Beginning 2014)

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 (SVC)	3.Enteric septicaemia of catfish
4. Viral haemorrhagic septicaemia (VHS)	
5. Infection with *Aphanomyces invadans* (EUS)	
6. Red seabream iridoviral disease (RSID)	
7. Infection with koi herpesvirus (KHV)	
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. Acute viral necrosis (in scallops)
3. Infection with abalone herpesvirus	
4. Infection with *Xenohaliotis californiensis*	
5. Infection with ostereid herpesvirus*	
1.3 CRUSTACEAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Taura syndrome (TS)	1. Monodon slow growth syndrome
2. White spot disease (WSD)	2. Acute hepatopancreatic necrosis disease (AHPND)
3. Yellowhead disease (YHD)	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	
5. Infectious myonecrosis (IMN)	
6. White tail disease (MrNV)	
7. Necrotising hepatopancreatitis (NHP)	
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. Infection with HPRdeleted or HPR0 salmon anaemia virus	1. Channel catfish virus disease
2. Infection with salmon pancreas disease virus	
3. Infection with *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*	
2.3 Crustaceans	
OIE-listed diseases	**Non OIE-listed diseases**
1. Crayfish plague (*Aphanomyces astaci*)	

*** Listed as Emerging Disease**

Recent Aquatic Animal Health Related Publications

OIE Aquatic Animal Health Code, 16th Edition, 2013. The OIE Aquatic Animal Health Code (the Aquatic Code) sets out standards for the improvement of aquatic animal health and welfare and veterinary public health worldwide, including through standards for safe international trade in aquatic animals (amphibians, crustaceans, fish and molluscs) and their products. The health measures in the Aquatic Code should be used by the veterinary authorities of importing and exporting countries to provide for early detection, reporting and control of agents pathogenic to aquatic animals and, in the case of zoonotic diseases, for humans, and to prevent their transfer via international trade in aquatic animals and aquatic animal products, while avoiding unjustified sanitary barriers to trade.The health measures in the Aquatic Code have been formally adopted by the World Assembly of OIE Delegates, which constitutes the organisation's highest decision-making body. This 15th edition incorporates modifications to the Aquatic Code agreed at the 80th General Session in May 2012.The 2012 edition includes revised information on the following subjects: glossary; notification of diseases and epidemiological information; criteria for listing aquatic animal diseases; diseases listed by the OIE; import risk analysis; welfare of farmed fish during transport; welfare aspects of stunning and killing of farmed fish for human consumption; and disinfection of salmonid eggs for infectious haematopoietic necrosis, infectious salmon anaemia and viral haemorrhagic septicaemia. This edition includes four new chapters on communication; monitoring of the quantities and usage patterns of antimicrobial agents used in aquatic animals; development and harmonisation of national antimicrobial resistance surveillance and monitoring programmes for aquatic animals; and killing of farmed fish for disease control purposes. The Aquatic Animal Health Code is available for free download http://www.oie.int/international-standard-setting/aquatic-code/access-online/

OIE Manual of Diagnostic Tests for Aquatic Animals, 2014. 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/

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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.

+?( ) These symbols mean that confirmed infection/infestation is limited to one of more zones of the country, but no clinical disease.

?( ) These symbols mean the presence of the disease suspected but not confirmed in a zone.

[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:

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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
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ISSN 1513-6558