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(Asia and Pacific Region)

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Contents

Foreword

Implementation of National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) in India

For this quarter, the National Disease Surveillance Programme of India is highlighted. The programme was initiated three years ago and below is the status write up by **Dr. Kuldeep K. Lal**, Director of the National Bureau of Fish Genetic Resources, ICAR which is the main agency involved in the implementation of the programme.

Early detection is considered to be key to the control of diseases. This requires active vigilance for signs of disease outbreak, rapid diagnosis of its infectious aetiology and can only be achieved through a structured surveillance programme. Considering the necessity of a surveillance programme in India and to comply with international SPS regime, a National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) is implemented since 2013, which is being funded by the National Fisheries Development Board (NFDB), Hyderabad; Department of Animal Husbandry, Dairying and Fisheries (DADF), Ministry of Agriculture, Government of India. The program is coordinated by ICAR-National Bureau of Fish Genetic Resources and implemented in 16 states of aquaculture and fisheries importance and two Union Territories through 25 National/State Fisheries Research Institutes/colleges. The project was established through consultation with international experts including Network of Aquaculture Centres in Asia-Pacific (NACA) providing technical advice.

All the information generated under NSPAAD in predesigned formats (baseline information of the farms, biological sample collection information under active surveillance which includes both normal and abnormal observations, disease outbreak information of finfish, crustaceans and molluscs) are being compiled in a National Aquatic Animal Disease Database. Many new pathogens of aquatic animals have been reported for the first time from country.

- Infection with carp edema virus in freshwater fish
- Infection with *Enterocytozoon hepatopenaei* (EHP) in cultured shrimps
- Infectious myonecrosis in cultured shrimps
- Infection with *Perkinsus olseni* in farmed molluscs, *Perna viridis*

A vital component of the surveillance programme is competent and reliable diagnostic laboratory support that is fully integrated into the overall disease surveillance programme. ICAR-NBFGR has the diagnostic capability for all the OIE listed as well as emerging diseases of aquatic animals. The positive controls are being provided to the collaborating centres for strengthening the diagnostic facilitates in the the country. A "Diagnostic Manual for Aquatic Animal Diseases of National Concern" containing information about etiological agent, susceptible host species, target organs, diagnostic methods etc. for all the prioritized diseases has been published.

Indian aquaculture has advanced from a traditional practice to a science-based activity and developed into a significant food production sector with present production reaching over 10.8 million tonnes. With food security being a primary concern for the country, the aquaculture

sector has the potential to play an important role for providing quality animal protein for the growing population besides providing livelihood for people. However, diseases have been recognized as a major constraint to the sustainability of the sector. The epidemic spread and devastating effects of white spot disease in penaeid shrimps and infection with *Aphanomyces invadans* in finfish have highlighted the vulnerability of aquaculture system to disease emergencies.

One of the main emphasis of the programme has been to strengthen the passive surveillance system in the country, so that there is improvement in the disease reporting by the farmers and state fisheries officers. As farmers are called 'eyes of the surveillance system', for sensitizing them, mass awareness meetings are being organized. During the meetings, awareness materials (containing information about important diseases, procedure for collecting and dispatch of samples, information about the nearest national/state fisheries research institute/university/college and contact details of the scientists responsible for surveillance etc.) in regional languages are being distributed. To encourage the farmers for reporting disease outbreaks/submission of samples for diagnosis, logistical support is being provided through the project fund. Further, as the key personnel involved in the disease reporting are state fisheries officers, for strengthening their disease diagnostic capability, specific training on fish disease diagnosis, basic water quality parameter analysis, method of sample collection, preservation and despatch etc is being provided. In addition, to follow uniform protocols for diagnosis of diseases of National concern by all the collaborating centres, a 'Diagnostic Manual for Aquatic Animal Diseases of National Concern' containing information about etiological agent, susceptible host species, target organs, diagnostic methods etc. for all the prioritized diseases has been published and circulated. Currently, diagnostic capability has been developed for major OIE-listed diseases of finfish, crustaceans and molluscs. Furthermore, diagnostic capability for the emerging pathogens is being continuously upgraded. The positive controls are being provided to the collaborating centres as per requirement.

For investigating the disease outbreaks, after receipt of any such information, attempt is made for visiting the farm site for collection of case history in a standardised format as well as for collection of clinical samples. After collection of samples, level II and III disease diagnosis are done by the collaborating centre and the results are intimated to the stakeholders. After preliminary diagnosis, if it is suspected to be the first report of OIE/NACA listed disease, an emergency response team is constituted under NSPAAD comprising scientists from different institutes, which carries out disease investigation and submits the report to the Nodal Center. Following report of a new disease, the same is validated by at least 2 collaborating centres and a detailed report is submitted to the Competent Authority i.e. DADF. During the reporting period, three emergency response teams have been constituted and the details are as follows.

- In response to speculations and misconceptions regarding occurrence of the early mortality syndrome (EMS)/acute hepatopancreatic necrosis disease (AHPND) in the country in 2013, an emergency response team was constituted with Director, Central Institute of Brackishwater Aquaculture as the Chairman, and involving experts from other three collaborating institutes as members. As a follow-up action, targeted surveillance was undertaken to confirm the status of the disease from the country. However, AHPND was not detected in any of the samples analysed and till today, India is considered to be free from AHPND.

- In response to large-scale mortalities in goldfish, *Carassius auratus* in Hooghly District, West Bengal in November 2014, and an emergency response team was constituted. The team investigated the outbreak and diagnosed the disease to be infection with cyprinid herpesvirus-2 on the basis of the PCR and sequencing of the amplified PCR products, virus isolation, histopathological findings as well as bioassay.
- Following first report of Infectious Myonecrosis (IMN) in pond reared *Litopenaeus vannamei* in East Midnapur, West Bengal by C. Abdul Hakeem College, Melvisharam on thye basis of RT-PCR, sequencing of PCR products and bioassay, the samples were cross validated by two collaborating institutes. Further, an emergency response team was constituted for undertaking targeted active surveillance for IMNV to know the spread of IMNV in the country.

In addition, one important pathogen i.e. *Enterocytozoon hepatopenaei* (EHP) has been reported for the first time from *Litopenaeus vannamei* and infection with *Perkinsus olseni* has been reported in a new host i.e. *Perna viridis*.

Each collaborating centre is also carrying out active surveillance in 3-5 districts of aquaculture importance in the respective state. Under this activity, more than 1100 farms in more than 115 districts are being monitored regularly. The selected farm is visited twice per crop for collection of samples and screened for selected pathogens viz. spring viremia of carp virus (SVCV) & koi herpesvirus (KHV) for carps; infectious pancreatic necrosis virus (IPNV) & viral haemorrhagic septicemia virus (VHSV) for coldwater fishes; yellow head virus (YHV), infectious myonecrosis virus, taura syndrome virus (TSV), infectious hypodermal and haematopoietic necrosis virus & white spot syndrome virus in shrimps and *Perkinsus olseni*, *Marteilia refringens, Bonamia ostreae, B. exitiosa* & Ostreid herpesvirus for molluscs. The screened finfish and shellfish samples have been found to be negative for SVCV, KHV, IPNV, VHSV, YHV, TSV, *M. refringens, B. ostreae, B. exitiosa* & Ostreid herpesvirus. Baseline information about the farms is being collected. The information generated under NSPAAD in predesigned formats are being compiled in a National Aquatic Animal Disease Database**.** The preparation and maintenance of the database is facilitated by ICAR-National Institute of Veterinary Epidemiology and Disease Informatics.

The Quarterly Aquatic Animal Disease (QAAD) report is being compiled by ICAR-NBFGR on basis of disease information received from collaborating institutes of NSPAAD. Over the last few years, reports of any new diseases are reflected in QAAD report and there has been improvement in disease reporting to NACA and OIE.

Implementation of National aquatic animal disease surveillance programme is contributing significantly to improved disease diagnosis, better coordination amongst research institutes and providing reliable advice to fish farmers. Further, the programme is helping in knowing the range and distribution of pathogens affecting aquatic animals in the country which would eventually help in better management of aquatic animal diseases.

This program has pursued the scientific work along with capacity building of the partners through International consultations and programs. Recently ICAR-NBFGR conducted an International Symposium on Aquatic Animal Health and Epidemiology followed by

Epidemiology School on Aquatic Animal Diseases conducted by Prof Kenton L. Morgan of university of Liverpool. The chain of programs aimed to build a inputs to develop strategic planning and roadmap for the future surveillance program in India.

Reports Received by the NACA and OIE-RRAP

(Officially prepared by OIE Aquatic Focal Point/NACA National Coordinator, and submitted by OIE Delegate)

Country: AUSTRALIA* **Period: October - December 2016**

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	-(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)	-(2016)	-(2016)	-(2016)		2
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-(2016)	-(2016)	+	III	3
10.Enteric septicaemia of catfish	-(2014)	-(2014)	-(2014)		4
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	+	-(2016)	-(2016)	III	5
2. Infection with *Perkinsus olseni*	-(2016)	+	-(2016)	III	6
3. Infection with abalone herpesvirus	-(2011)	-(2011)	-(2011)		7
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
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	+	+	III	8
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-(2015)	-(2015)	-(2015)		9
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		10
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		

*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		11
2. Infection with *Batrachochytrium dendrobatidis*	+	-(2016)	-(2016)	III	12
ANY OTHER DISEASES OF IMPORTANCE					
1.					

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 New South Wales (last reported march 2016), Queensland (last reported 2014), Western Australia (last reported 2013), 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 New South Wales** in December; active surveillance; 2. **Species affected** – Australian bass fry (*Macquaria novemaculeata*); 3. **Clinical signs** – subclinical infection detected as part of pre-stocking nodavirus screening; 4. **Pathogen** – Betanodavirus; 5. **Mortality rate** –N/A (sub-clinical infection); 6. **Economic loss** – N/A; 7. **Geographic extent** – one pond and one tank in one hatchery; 8. **Containment measures** –destruction of affected stock, decontamination of ponds/tanks; 9. **Laboratory confirmation** – nodavirus PCR; 10. **Publications** – None. Viral encephalopathy and retinopathy is known to have occurred previously in Queensland (last reported in August 2016), the Northern Territory (last reported 2013), Western Australia (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** (*Edwardsiella ictaluri*) was not reported this period. Has been reported from clinically normal fish from a single river in Queensland (October 2014). This is the only occurrence of *E. ictaluri* in wild fish populations in Australia. Active surveillance throughout Northern Australia has found no evidence of *E. ictaluri* in any other wild fish populations. *E. ictaluri* has been detected previously in association with imported ornamental fish including: Northern Territory in closed aquarium (last reported 2011) and in PC2 containment facilities in Tasmania (last reported 2001) and Queensland (last reported 2008). 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 *Bonamia exitiosa*** 1. **Reported in Western Australia** in October 2016; targeted surveillance; 2. **Species affected** – flat oysters (*Ostrea angasi*); 3. **Clinical signs** – sub-clinical; 4. **Pathogen** – *Bonamia exitiosa*; 5. **Mortality rate** – N/A; 6. **Economic loss** – N/A; 7. **Geographic extent** – wild populations; 8. **Containment measures** – N/A; 9. **Laboratory confirmation** – PCR and sequencing, 10. **Publications** – nil. Infection with *Bonamia exitiosa* was not reported this period despite passive surveillance in South Australia (last reported July 2016) and Victoria (last reported January 2016). Passive surveillance in Queensland, New South Wales, Tasmania and Northern Territory. No information available for the Australian Capital Territory (no marine water responsibility).

6	**Infection with *Perkinsus olseni*** 1. **Reported in Western Australia** in November 2016, targeted surveillance; and **South Australia** in November 2016, passive surveillance; 2. **Species affected** – farmed and wild greenlip abalone (*Haliotis laevigata*) in Western Australia; wild abalone (*Haliotis laevigata*, *Haliotis rubra*) in South Australia; 3. **Clinical signs** – subclinical in Western Australia; low level clinical in South Australia; 4. **Pathogen** – *Perkinsus olseni*; 5. **Mortality rate** – N/A; 6. **Economic loss** – N/A; 7. **Geographic extent** – on farm and in the wild in Western Australia; only detected in central and western zone fisheries, never detected in southern zone fishery, in South Australia; 8. **Containment measures** – N/A; 9. **Laboratory confirmation** – RFTM; 10. **Publications** – None. *Perkinsus olseni* was not reported this period despite passive surveillance in Victoria (last reported March 2015 in *Ostrea angasi*), Queensland (last reported 2014), South Australia (last reported 2013), and New South Wales (last reported 2005). Passive surveillance and never reported in the Northern Territory and Tasmania. No information available for the Australian Capital Territory (suceptible species not present and no marine water responsibility).
7	**Infection with abalone herpesvirus (abalone viral ganglioneuritis)** was not reported this period despite passive surveillance in Tasmania (last reported 2011), 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).
8	**White Spot Disease** 1. **Reported in Queensland** in November, passive surveillance and December 2016, targeted surveillance; 2. **Species affected** – giant tiger prawn (*Penaeus monodon*) 70+ days post-stocking juveniles in November, 28+ days of culture juveniles in December;; 3. **Clinical signs** – mortalities and white spots on cuticle; 4. **Pathogen** – White spot syndrome virus; 5. **Mortality rate** – unknown; 6. **Economic loss** – N/A; 7. **Geographic extent** – one farm in November, additional four farms in December on Logan River catchment; 8. **Containment measures** – no water discharge, quarantine, bird control, disinfection of water and prawns in-pond; 9. **Laboratory confirmation** – PCR, Real-time PCR, sequencing, histopathology; 10. **Publications** – **O**IE immediate and follow up notifications. White spot disease has never been reported despite passive surveillance in New South Wales, Victoria, Tasmania, South Australia, Western Australia and Northern Territory. No information available for the Australian Capital Territory (no marine water responsibility).

9	**Infectious hypodermal and haematopoietic necrosis virus (IHHNV)** was not reported this period but is known to have occurred previously in Queensland (last reported December 2015) and 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).
10	**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).
11	**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.
12	**Infection with *Batrachochytrium dendrobatidis*** 1. **Reported in Victoria** in November, passive surveillance; 2. **Species affected** – frog (*Xenopus laevis*), 3. **Clinical signs** – N/A; 4. **Pathogen** – *Batrachochytrium dendrobatidis*; 5. **Mortality rate** – N/A (single animal in laboratory context euthanased); 6. **Economic loss** – N/A; 7. **Geographic extent** – N/A; 8. **Containment measures** – animal house, no access to wildlife, effluent water treated with hypochlorite; 9. **Laboratory confirmation** – histopathology and PCR; 10. **Publications** – **nil**. Passive surveillance in Tasmania (last reported 2013), New South Wales (last reported 2012), and Western Australia (last reported 2008). Passive surveillance and never reported from the Northern Territory. No information available this period in the Australian Capital Territory and South Australia.

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

The AQUAVETPLAN disease stragy manual for Whirling disease has been revised and was published in August 2016 on the Department of Agriculture and Water Resources website (http://www.agriculture.gov.au/animal/aquatic/aquavetplan).

Queensland and other states and territories have implemented regulations in December 2016 covering movement and sale of bait prawns to minimise risk of spread of WSSV.

Country: HONG KONG SAR, CHINA* Period: October - December 2016

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp (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. Koi herpesvirus disease (KHV)	-	-	-	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10.Enteric septicaemia of catfish	0000	0000	0000	II	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Perkinsus olseni*	0000	0000	0000	II	
3. Infection with abalone herpesvirus	0000	0000	0000	II	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	II	
5. Infection with *Bonamia ostreae*	***	***	***		
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	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague					
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000	II	
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		

*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000	II	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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: INDIA* **Period: October - December 2016**

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)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-	-	-		
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*	+	+	+	II,III	1
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	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)	+	+	+	III	2
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+	+	+	III	3
5. Infectious myonecrosis (IMN)	(2016)	(2016)	(2016)		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	-	-	-		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	+	+	+	III	4

*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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	Infection with *Perkinsus olseni* reported from *Paphia malabarica* in Kasargod, Kozhikode and Kollam districts; *Perna viridis* in Kasargod district and *Meretrix* sp. and *Villoria cyprinoides* from Kozhikode district, Kerala; and *Anadara granosa* from Kakinada district, Andhra Pradesh.
2	WSSV was detected form *Penaeus indicus* in Ernakulam district of Kerala; *P. monodon* in Thrissur, Kannur and Ernakulam districts in Kerala. WSSV was also detected in *Litopenaeus vannamei* from Nagapattinam, Thanjavur, Puddukkottai, Thoothukudi, Kanchipuram, Thiruvallur and Cuddalore districts of Tamil Nadu; Raigad, Thane and Ratnagiri districts of Maharashtra; East Godavari, West Godavari, Srikakulam and Nellore districts of Andhra Pradesh; Balasore and Bhadrak districts of Odisha; Uttar Kannada district of Karnataka; and Navsari district of Gujarat.

3	IHHNV was detected in *P monodon* from Thane district in Maharashtra; Thrissur and Ernakulam districts of Kerala*;* Thoothukudi district of Tamil Nadu; and East Godavari & West Godavari districts of Andhra Pradesh.
4	Infection with *Entrocytozoon hepatopenaei* was reported in *Litopenaeus vannamei* from East Godavari, West Godavari, Visakhapatnam, Srikakulam and Nellore districts of Andhra Pradesh; Balasore, Bhadrak and Puri districts of Odisha; Thoothukudi, Kanchipuram, Cuddalore, Nagapattinam , Thanjavur, Villupuram, Rammad and Pudukkottai districts of Tamil Nadu; Udipi district of Karnataka.

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

Country: INDONESIA* **Period: January - March 2016**

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)	***	***	***		
7. Koi herpesvirus disease (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	***	***	***		
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 *Bonamia ostreae*	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)	+ ( )	+ ( )	+ ( )	III	4
2. White spot disease (WSD)	+ ( )	+ ( )	+ ( )	III	5
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+ ( )	+ ( )	+ ( )	III	6
5. Infectious myonecrosis (IMN)	+ ( )	+ ( )	+ ( )	III	7
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague					
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)					

*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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 Hervesvirus Disease** 1. **Origin of the disease or pathogen**: (1) **January**: (a). West Java Provinces: Kab. Sukabumi and Kota Sukabumi; (b). South Kalimantan: Kab Banjar; (2) **February**: (a). West Java Provinces: Kab. Sukabumi and Kota Sukabumi, Kab. Bandung Barat, Kabupaten Cianjur; (3) **March**: (a). West Java Provinces: Kab. Sukabumi dan Kota Sukabumi, Kab. Bogor, Kab. Cianjur, Kab. Purwakarta and Kab, Bandung Barat. 2. **Species affected**: *Cyprinus carpio* Koi*;* 3. **Diseases charateristic**: Gill necrosis, body lesion, mass mortality, lethargy, fin rot; 4. **Pathogen**: Koi herpesvirus; 5. **Mortality rate**: (1). West Java: <25%; (2). South Kalimantan: 50%; 6. **Economic loss** : (1) Sukabumi : US $ 38,5 ; (2). South Kalimantan: US $ 77; 7. **Name of infected areas:** (1) **January** : (a). West Java Provinces: Cisaat- Sukabumi district and Cikole-Sukabumi City; (b). South Kalimantan province: Karang Intan-Banjar district (2) **February:** (a). West Java Provinces: Cisaat-Sukabumi district, Cikole-Sukabumi City, Cipeundey-West Bandung distrist, Mande-Cianjur district; **(3). March:** (a). West Java Provinces: Cisaat- Sukabumi district, Cikole-Sukabumi City, Parung-Bogor district, Ciseeng-Bogor district, Cibungbulang-Bogor district, Mande- Cianjur district, Maniis-Purwakarta district, Cipeundey-West Bandung district; 8. **Preventive/control measures**: KHV vaccination and immunostimulan, adding vit.C, Good Aquaculture Practices implementation, Good Breeding Practices implementation; 9. **Laboratory confirmation**: Freshwater Fisheries Aquaculture Main Center Sukabumi Laboratory, Freshwater Fisheries Aquaculture Center Mandiangin Laboratory; 10. **Publication** : -

2	**Grouper iridoviral disease** 1. **Origin of the disease or pathogen**: (1) **January**: (a). Lampung : Kab. Pesawaran ; (b). West Nusa Tenggara: Kab. Lombok Barat ; (c). Maluku : Kota Ambon (2) **February**: (c). Maluku : Kota Ambon (3). **March**: (a). West Nusa Tenggara : Kab. Lombok Barat; 2. **Species affected**: (1) Lombok : *Ephinephelus fuscoguttatus lanceolatus* (size 15-16 cm), *Chromileptes altivelis* (12-15 cm), (2) Lampung Province : *Cromileptes altivelis, Epinephelus fuscoguttatus*; (3). Ambon: *Lates calcarifer* size 8 cm (hatchery) in January and size 67 cm in February; 3. **Diseases charateristic**: necrosis, spleen inflammation, whirling, mass mortality, decreased appetite, and pale body color; 4. **Pathogen**: Iridoviridae genus *Megalocytivirus*; 5. **Mortality rate**: 30-60% 6. **Economic loss** : (1) Lampung (Teluk Hurun) : NA; (2). West Nusa Tenggara: NA; (3). Maluku: US $ 7,692; 7. **Name of infected areas:** (1) **January**: (a). Lampung province: Sub-district Padang Cermin-Pesawaran district; (b). West Nusa Tenggara Provinces: Sub-district Sekotong-West Lombok; (c). Maluku province: Sub-district Baguala-Ambon dsitrict (2) **February**: (c). Maluku province: Sub-district Baguala-Ambon dsitrict (3). **March**: (a). West Nusa Tenggara Provinces: Sub-district Sekotong and Pemenang- West Lombok; 8. **Preventive/control measures**: Eradication, reduce stock density, vaccination, immunostimulant (vitamin C), feed management, and water quality management; 9. **Laboratory confirmation**: Mariculture Devolopment Center Lombok Laboratory, Main Center of Mariculture Development Lampung, Mariculture Development Centre Ambon Laboratory; 10. **Publication** : -
3	**Viral encephalopathy and retinopathy (VER)** 1. **Origin of the disease or pathogen**: (1) **January**: (a). Lampung : Kab. Pesawaran, (b). West Nusa Tenggara : Kab. Lombok Barat; (c). Maluku : Kota Ambon; (2) **February**: (a). West Nusa Tenggara: Kab. Lombok Barat; (b). Maluku : Kota Ambon (3). **March**: (a). West Nusa Tenggara : Kab. Lombok Barat, (b). Maluku : Kota Ambon; 2. **Species affected**: (1) Lampung : (Sub-District Padang Cermin-Pesawaran district): grouper larvae ; (2). West Nusa Tenggara Provinces (West Lombok) : *Epinephelus fuscoguttatus* seed size 15 cm-16 cm, ikan bawal (*Trachionotus blochii*) rate size 10 cm (in February); (3). Maluku: *Epinephelus fuscoguttatus* seed, *Cromileptes altivelis*, ikan kakap (*Lates calcarifer*); 3. **Diseases charateristic**: Fin rot, decrease appetite, pale body color, swimming on the water surface; 4. **Pathogen**: VER nodavirus; 5. **Mortality rate**: (1) Lampung: 30 - 60% ; (2). West Nusa Tenggara: <30% (3). Maluku: 30 - 60%; 6. **Economic loss** : (1). Lampung: NA ; (2). Maluku: US $ 154. for *Epinephelus fuscoguttatus* seed and US $ 385 for *Lates calcarifer* in January; 7. **Name of infected areas:** (1) **January**: (a). Lampung province: Sub-District Padang Cermin-Pesawaran district: (b). West Nusa Tenggara province: Sub-District Sekotong-West Lombok; (c). Maluku province: Sub-District Baguala-Ambon City; (2) **February**: (a). West Nusa Tenggara: Sub-District Sekotong-West Lombok; (b). Maluku province: Sub-District Baguala-Ambon City (3). **March**: (a). West Nusa Tenggara province: Sekotong-West Lombok, (b). Maluku province: Sub-District Baguala-Ambon City; 8. **Preventive/control measures**: SPF larvae and broodstock eradication, reduced seed density, vaccination, immunostimulant (vitamin C) in feeds, water quality control.; 9. **Laboratory confirmation**: Main Center for Mariculture Lampung, Center for Mariculture Lombok; Main Center for Mariculture Ambon; 10. **Publication** : -

4	**Taura Syndrome (TS)** 1. **Origin of the disease or pathogen**: (1). **January**: (a). Banten : kab. Pandeglang; (b). South Sulawesi: kab. Pangkajene Kepulauan, kab. Takalar; (2). **February**: (a). Banten : kab. Pandeglang; (b). South Sulawesi: kab. Pangkajene Kepulauan, kab. Takalar; (3). **March**: (a). South Sulawesi: kab. Takalar; 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: red body color, mass mortality, empty digestive tract; 4. **Pathogen**: Taura syndrome virus; 5. **Mortality rate**: <30% 6. **Economic loss** : South Sulawesi: USD 5,230 (January) 7. **Name of infected areas:** (1). **January**: (a). Banten province: Sub-district Labuan-Pandeglang district; (b). South Sulawesi: Sub-district Segeri-Pangkajene island district; Sub-district Galesong-Takalar district; (2). **February**: - (3). **March**: (a). Sub-district Galesong-Takalar district; 8. **Preventive/control measures**: water quality management, biosecurity, use of probiotics and immunostimulant (Vitamin C); 9. **Laboratory confirmation**: Center for Fish Disease and Environmental Investigation Serang-Banten, Center for Brackishwater Aquaculture Takalar; 10. **Publication** : -
5	**White Spot Disease (WSD)** 1. **Origin of the disease or pathogen**: (1) **January**: (a) Aceh: kab. Aceh Jaya; kab. Aceh Timur, Kab. Aceh Besar, (b).Banten: kab. Pandeglang, (c). Central Java: kab. Kendal, Kab. Jepara; (d). South Sulawesi: kab. Pangkajene Kepulauan; kab. Takalar; (2). **February**: (a). Aceh: Kab. Aceh Besar; kab. Pidie, kab. Pidie Jaya; (b). Banten: kab. Pandeglang, (c). South Sulawesi: Kab. Takalar; (3). **March**: (a). Aceh : Kab.Aceh Besar, Kab. Pidie Jaya, Kab. Aceh Utara; (b). Banten: Kab. Pandeglang; (c). Central Java: Kab. Rembang; (d). South Sulawesi: Kab. Takalar,Kab. Pinrang, Kab. Sinjai; 2. **Species affected**: *Penaeus vannamei* and *P. monodon*; 3. **Diseases charateristic**: white spot in carapace, swimming on the water surface, mass mortality; 4. **Pathogen**: White spot syndrome virus; 5. **Mortality rate**: (a,b) < 30%, (c) 75% in Kendal (January); 6. **Economic loss** : US $ 23,077 in Central java; US $ 5,230 in sub-district Segeri (January); 7. **Name of infected areas:** (1) **January**: (a) Aceh Province: Sub-district Trienggadeng-Aceh Jaya district; Sub-district Idi Rayeuk- East Aceh- Sub-district Mesjid Raya-Aceh Besar district; (b).Banten Province: Sub-district Labuan-Pandeglang district; (c) Central Java: Sub-district Cepiring-Kendal district; Sub-district Kedung-Jepara district; (d). South Sulawesi: Sub-district Segeri-Pangkajene Islands; Sub-district Galesong-Takalar district; (2). **February**: (a). Aceh Province: Sub-district Mesjid Raya-Aceh Besar district; Sub-district Kembang Tanjong-Pidie district, Sub-district Trienggadeng-Pidie Jaya district; (b). Banten Province: Sub-district Panimbang-Pandeglang district; (c). South Sulawesi: Sub-district Mappakasunggu and Sub-district Galesong-Takalar district; (3). **March**: (a). Aceh Province: Sub-district Mesjid Raya-Aceh Besar district, Sub-district Trienggadeng- Pidie Jaya district, Sub-district Lapang-North Aceh district; (b). Banten province: Sub-district Panimbang-Pandeglang district; (c). Central Java: Sub-district Sluke- Rembang district; (d). South Sulawesi: Sub-district Galesong - Takalar district, Sub-district Suppa- Pinrang, Sub-district Sinjai Utara- Sinjai district; 8. **Preventive/control measures**: SPF PL, water quality management, biosecurity, use of probiotics and immunostimulant (Vitamin C);

	9. **Laboratory confirmation**: Center for Fish Disease and Environmental Investigation Serang - Banten, Main Center for Brackishwater Aquaculture Jepara, Center for Brackishwater Aquaculture Takalar, Center for Brackishwater Aquaculture Ujung Batee; 10. **Publication** :
6	**Infectious hypodermal and haematopoietic necrosis (IHHN)** 1. **Origin of the disease or pathogen**: (1). **January**; (a). Aceh: Kab. Aceh Jaya; Kab.Aceh Timur; (b). Banten: Kab.Pandeglang; (2). **February**: (a). Aceh: Kab. Aceh Besar ; Kab.Pidei; Kab.Pidie Jaya; (b). Central Java : Kab. Rembang; (3). **March**: Aceh : (a). Kab. Aceh Besar; Kab. Pidie Jaya; Kab. Aceh Utara; (b). West Java: Kab. Subang; (4). Central Java: Kab. Rembang; 2. **Species affected**: *Penaeus vannamei* and *P. monodon*; 3. **Diseases charateristic**: shrimp swimming weakly on the surface water, mass mortality, slow growth, and white spot between exoskeleton and carapace; 4. **Pathogen**: Infectious hypodermal and haemotopoietic necrosis virus; 5. **Mortality rate**: 40%; 6. **Economic loss** : US$3,846; 7. **Name of infected areas:** (1). **January**; (a). Aceh province: Sub-district Trienggadeng-Aceh Jaya district; Sub-district Idi Rayeuk-Aceh Timur district; (b). Banten province: Sub-district Labuan-Pandeglang district; (2). **February**: (a). Sub-district Maesjid Raya-Aceh Besar district; Sub-district Tanjong- Pidei district; Sub-district Trienggadeng- Pidie Jaya district; (b). Sub-district Sluke-Rembang district; (3). **March**: Aceh province: (a). Sub-district Maesjid Raya-Aceh Besar district; Sub-district Trienggadeng- Pidie Jaya district; Sub-district Lapang-Notrh aceh; (b). West Java: Sub-district Patokbeusi-Subang district; (c). Central Java: Sub-district Sluke-Rembang district; 8. **Preventive/control measures**: biosecurity, SPF PL, water quality management, feed management, use of probiotics and immunostimulant (Vitamin C); 9. **Laboratory confirmation**: Center for Fish Disease and Environmental Investigation Serang - Banten, Main Center for Brackishwater Aquaculture Jepara, Center for Brackishwater Aquaculture Ujung Batee; 10. **Publication** : -

7	**Infectious myonecrosis (IMN)** 1. **Origin of the disease or pathogen** (1) **January**: (a) Aceh: Kab. Aceh Jaya; (b). Banten :Kab. Pandeglang; (c). East Java: Kab. Banyuwangi; (b) East sulawesi: Kab. Pangkajene; (2). **February**: (a).Aceh: Kab. Pidie; Kab. Pidie Jaya; (b). Banten: Kab. Pandeglang; (c). West Java : Kab.Ciamis; (d). East Java: Kab.Lamongan; (e). South Sulawesi: Kab.Takalar; (3). **March**: (a). Aceh: Kab. Pidie Jaya (b). Banten : Kab.Pandeglang ; (c). East Java: Kab. Pasuruan; (d). South Sulawesi: Kab.Takalar; 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: mortality, redness in uropod, reddish muscle; 4. **Pathogen**: Infectious myonecrosis virus; 5. **Mortality rate**: (a) Banyuwangi: < 10% in January; (b). Sub-district Paciran-Lamongan district: 46% in February; 6. **Economic loss** : Lamongan: US$249; 7. **Name of infected areas:** (1) **January**: (a) Aceh : ; Sub-district Trienggadeng-Aceh Jaya district; (b). Banten province: Sub-district Labuan and Sub-district Panimbang-Pandeglang district; (c). East Java: shrimp seeds from Wongsorejo (Banyuwangi district); (b) East sulawesi: Sub-district segeri-Pangkajene island district; (2). **February**: (a).Aceh : Sub-district Kembang Tanjong-Pidie district; Sub-district Trienggdeng-Pidie Jaya district; (b). Banten: Sub-district Panimbang-Pandeglang district; (c). West Java: Sub-district Panumbangan-Ciamis district; (d). East Java: Sub-district Paciran-Lamongan district; (e). South Sulawesi: Sub-district Galesong-Takalar district; (3). **March**: (a). Aceh: Sub-district Trienggading-Pidie Jaya district (b). Banten: Sub-district Panimbang-Pandeglang district; (c). East Java: Sub-district Sedayu-Pasuruan district; (d). South Sulawesi: Sub-district Galesong-Takalar district; 8. **Preventive/control measures**: biosecurity, SPF PL, water quality management, use of probiotics and immunostimulant (Vitamin C); 9. **Laboratory confirmation**: Center for Brackishwater Aquaculture Situbondo, Center for Fish Disease and Environmental Investigation Serang-Banten; 10. **Publication** : -

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

Country: INDONESIA* Period: April - June 2016

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
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)	***	***	***		
7. Koi herpesvirus disease (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	***	***	***		
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 *Bonamia ostreae*	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)	***	+ ( )	***	III	4
2. White spot disease (WSD)	***	***	+ ( )	III	5
3. Yellowhead disease (YHD)	***	***	***	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	***	+ ( )	+ ( )	III	6
5. Infectious myonecrosis (IMN)	***	+ ( )	+ ( )	III	7
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		

*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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 Hervesvirus Disease** 1. **Origin of the disease or pathogen**: **April**: West Java (Kota Sukabumi, Kabupaten Sukabumi); **May**: West Java (Kota Sukabumi, Kab. Sukabumi, Kab. Bandung Barat, Kab Cianjur), Banten (Kabupaten Serang); **June**: West Java (Kota Sukabumi, Kabupaten Sukabumi, Kab. Cianjur). 2. **Species affected**: Common carp *(Cyprinus carpio)* and Koi Carp *(Cyprinus carpio koi);* 3. **Diseases charateristic**: Gill necrosis, lethargy, body ulcers; 4. **Pathogen**: Koi herpesvirus; 5. **Mortality rate**: 30-40%; 6. **Economic loss** : **April**: West Java (Kota Sukabumi = US $ 26.73; Kab. Sukabumi = NA); **May**: West Java (Kota Sukabumi = US $ 261.54; Kab. Sukabumi = US $ 69.23; Kab. Bandung Barat = NA; Kab Cianjur = NA) Banten (Kabupaten Serang = NA); **June**: West Java (Kota Sukabumi = US $ 19.23, Kabupaten Sukabumi = US $ 17.69, Kab. Cianjur = NA; 7. **Name of infected areas April:** West Java (Cikole subdistrict - Kota Sukabumi and Kabupaten Sukabumi); **May**: West Java (Cikole subdistrict- Kota Sukabumi, Cisaat subdistrict - Kab. Sukabumi, Cipendeuy subdistrict - Kab. Bandung Barat, Mande subdistrict - Kab Cianjur), Banten (Kabupaten Serang); **June**: West Java (Kota Sukabumi, Cisaat subdistrict - Kabupaten Sukabumi, Cirata Dam - Kab. Cianjur); 8. **Preventive/control measures**: KHV vaccination and immunostimulant (vitamin C), water quality management; 9. **Laboratory confirmation**: Main Center for Freshwater Aquaculture, Sukabumi; 10. **Publication** : -

2	**Grouper iridoviral disease** 1. **Origin of the disease or pathogen**: **April**: West Sumatera (Kab. Pesisir Selatan), Kepulauan Riau (Kota Batam); Lampung (Kab. Lampung Selatan); **May**: West Sumatera (Kab. Pesisir Selatan), Lampung (Kab. Pesawaran), Kepulauan Riau (Kota Batam), Maluku (Kota Ambon); **June**: Aceh (Kabupaten Bireuen), Kepulauan Riau (Kota Batam) NTB (Kab. Lombok Barat); 2. **Species affected**: Groupers, Baramundi (*Lates calcalifer*), Red snapper (*Lutjanus campechanu*), Pompano (*Trachionotus blochi*) 3. **Diseases charateristic**: Pale liver, dark body colour, swelling of the spleen, spleen artrophy, multifocal necrosis, and granulosis at internal organs; 4. **Pathogen**: Iridovirus; 5. **Mortality rate**: <5% 6. **Economic loss** : - ; 7. **Name of infected areas: April**: West Sumatera (IV Jurai Subdistrict - Kab. Pesisir Selatan), Kepulauan Riau (Bulang District - Kota Batam), Lampung (Kalianda Subdistrict - Kab. Lampung Selatan); **May**: West Sumatera (IV Jurai subdistrict- Kab. Pesisir Selatan), Lampung (Padang Cermin subdistrict - Kab. Pesawaran), Kepulauan Riau (Bulang subdistrict - Kota Batam), Maluku (Teluk ambon subdistrict - Kota Ambon); **June**: Aceh (Jangka subdistrict - Kabupaten Bireuen), Kepulauan Riau (Bulang subdistrict - Kota Batam) NTB (Sekotong District -Kab. Lombok Barat); 8. **Preventive/control measures**: immunostimulant (Vitamin C), vaccination and water quality management; 9. **Laboratory confirmation**: Center of Brackishwater Aquaculture Ujung Batee - Aceh, Center for Mariculture Batam, Main Center for Mariculture Lampung, Center for Fish Disease and Environmental Investigation Serang - Banten, Center for Mariculture Lombok; 10. **Publication** : -
3	**Viral encephalopathy and retinopathy (VER)** 1. **Origin of the disease or pathogen**: **April**: Kepulauan Riau (Kota Batam), Maluku (Kota Ambon), NTB (Kab. Lombok Barat); **May**: Aceh (Kota Banda Aceh, Kab. Aceh Besar), Kepulauan Riau (Kota Batam), East Java (Kab. Situbondo), NTB (Kab. Lombok Barat), Maluku (Kota Ambon); **June**: Aceh (Kabupaten Bireuen), Kepulauan Riau (Kota Batam), NTB (Kab. Lombok Barat), Maluku (Kota Ambon); 2. **Species affected**: Groupers, Baramundi (*Lates calcalifer*), Red snapper (*Lutjanus campechanu*), Pompano (*Trachionotus blochi*); 3. **Diseases charateristic**: ulcers on the body, loss of appetite, schooling on the bottom, whirling, and some cases have no clinical sign; 4. **Pathogen**: Betanodavirus; 5. **Mortality rate**: <5%; 6. **Economic loss**: Ambon (US $ 80 - US $ 390); 7. **Name of infected areas: April**: Kepulauan Riau (Bulang Subdistrict - Kota Batam), Maluku (Baguala Subdistrict - Kota Ambon), NTB (Sekotong Subdistrict - Kab. Lombok Barat); **May**: Aceh (Meuraxa subdistrict- Kota Banda Aceh, Mesjid Raya - Kab. Aceh Besar), Kepulauan Riau (Bulang subdistrict - Kota Batam), East Java (Kendit subdistrict - Kab. Situbondo), NTB (Sekotong subdistrict - Kab. Lombok Barat), Maluku (Teluk ambon Subdistrict - Kota Ambon); **June**: Aceh (Jangka subdistrict - Kabupaten Bireuen), Kepulauan Riau (Bulang subdistrict - Kota Batam), NTB (Sekotong District -Kab. Lombok Barat), Maluku (Baguala Subdistrict - Kota Ambon); 8. **Preventive/control measures**: SPF broodstock, reduce stock density, immunostimulant (Vitamin C), vaccination, and water quality management.; 9. **Laboratory confirmation**: C enter of Brackishwater Aquaculture Ujung Batee - Aceh, Center for Mariculture Batam, Center of Brackishwater Aquaculture Sitobondo, Center for Mariculture Lombok, and Center for Mariculture Ambon; 10. **Publication** : -

4	**Taura Syndrome (TS)** 1. **Origin of the disease or pathogen: May**: South Sulawesi (Kab. Pinrang); 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: mass mortality and necrosis on the uropods; 4. **Pathogen**: Taura syndrome virus, Picorna - Like RNA Virus ; 5. **Mortality rate**: 30-50% 6. **Economic loss** : Ambon: US$ 5,385; 7. **Name of infected areas:** South Sulawesi (Mattiro Sompe subdistrict- Kab. Pinrang); 8. **Preventive/control measures**: reduce stocking density, probiotic, immunostimulant, and water quality management; 9. **Laboratory confirmation**: Center for Brackishwater Aquaculture Takalar; 10. **Publication** : -
5	**White Spot Disease (WSD)** 1. **Origin of the disease or pathogen:** June: South Sulawesi (Kab. Pinrang); 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: white spot on carapace and rostrum, uropod necrosis and reddish muscle; 4. **Pathogen**: White spot syndrome virus; 5. **Mortality rate**: 90%; 6. **Economic loss** : Ambon: US $ 5,385; 7. **Name of infected areas:** outh Sulawesi (Suppa subdistrict- Kab. Pinrang); 8. **Preventive/control measures**: reduce stocking density, probiotic, immunostimulant, and water quality management; 9. **Laboratory confirmation**: Center for Brackishwater Aquaculture Takalar; 10. **Publication** :
6	**Infectious hypodermal and haematopoietic necrosis (IHHN)** 1. **Origin of the disease or pathogen**: **May**: Banten (Kab. Pandeglang), Central Java (Kab. Brebes); **June**: South Sulawesi (Kab. Bulukumba); 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: slow growth, heterogenous shrimp growth rate, loss of appettite; 4. **Pathogen**: Infectious hypodermal and haemotopoietic necrosis virus; 5. **Mortality rate**: <30%; 6. **Economic loss** : Banten (Kab. Pandeglang = NA), Central Java (Kab. Brebes = US $ 1,923) June: South Sulawesi (Kab. Bulukumba = US $ 1,538); 7. **Name of infected areas: May**: Banten (Labuan Subdistrict - Kab. Pandeglang), Central Java (Tanjung Subdistrict - Kab. Brebes); **June**: South Sulawesi (Ujungloe subdistrict- Kab. Bulukumba); 8. **Preventive/control measures**: SPF PL, biosecurity, reduce stocking density, probiotics, immunostimulant, and water quality management; 9. **Laboratory confirmation**: Center for Fish Disease and Environmental Investigation Serang - Banten, Main Center for Brackishwater Aquaculture Jepara, Center for Brackishwater Aquaculture Takalar; 10. **Publication** : -

7	**Infectious myonecrosis (IMN)** 1. **Origin of the disease or pathogen: May**: Banten (Kab. Pandeglang), **June**: Banten (Kab. Pandeglang), South Sulawesi (Kab. Bulukumba); 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: mortality, redness in uropod, reddish muscle; 4. **Pathogen**: Infectious myonecrosis virus; 5. **Mortality rate**: (a) Banyuwangi: < 30%; 6. **Economic loss** : Lamongan: -; 7. **Name of infected areas: May**: Banten (Panimbang Subdistrict - Kab. Pandeglang), **June**: Banten (Labuan Subdistrict - Kab. Pandeglang), South Sulawesi (Gentorang Subdistrict - Kab. Bulukumba); 8. **Preventive/control measures**: SPF PL, reduce stocking density, probiotic, eradication, and water quality management 9. **Laboratory confirmation**: Center for Fish Disease and Environmental Investigation Serang - Banten, Center for Brackishwater Aquaculture Takalar; 10. **Publication** : -

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

Country: INDONESIA* **Period: July - September 2016**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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)	***	***	***		
7. Koi herpesvirus disease (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 *Bonamia ostreae*	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)	***	***	***		
2. White spot disease (WSD)	+ ( )	+ ( )	***	III	5
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+ ( )	***	+ ( )	III	6
5. Infectious myonecrosis (IMN)	+ ( )	+ ( )	***	III	7
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		

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AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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 Hervesvirus Disease** 1. **Origin of the disease or pathogen**: **July**: West Java (Sukabumi City); **August**: West Java (Sukabumi City) and Riau (Kampar District); September: West Java (Sukabumi City); 2. **Species affected**: Common and Koi carp (*Cyprinus carpio);* 3. **Diseases charateristic**: Gill necrosis, body ulcers, lethargy; 4. **Pathogen**: Koi herpesvirus; 5. **Mortality rate**: 10-30%; 6. **Economic loss** : West Java (Sukabumi City = US $ 23); August: West Java (Sukabumi City = NA) and Riau (Kampar District = NA); September: West Java (Kota Sukabumi = NA); 7. **Name of infected areas: July**: West Java (Sukabumi City); **August**: West Java (Sukabumi City) and Riau (Kampar District); September: West Java (Sukabumi City); 8. **Preventive/control measures**: immunostimulant (Vitamin C), vaccination and water quality management; 9. **Laboratory confirmation**: Main Center for Freshwater Aquaculture, Sukabumi and Center for Freshwater Aquaculture, Sungai Gelam; 10. **Publication** : -
2	**Grouper iridoviral disease** 1. **Origin of the disease or pathogen**: **July**: Lampung (Pesawaran District); **August**: Lampung (Pesawaran District) and Bali (Buleleng District); **September**: Lampung (Pesawaran District); 2. **Species affected**: groupers (*Chromileptes altivelis*); 3. **Diseases charateristic**: pale liver and haemorrhages at operculum, some did not show any clinical signs; 4. **Pathogen**: Iridovirus; 5. **Mortality rate**: 30-60% 6. **Economic loss** : N/A; 7. **Name of infected areas: July**: Lampung (Pesawaran District); **August**: Lampung (Pesawaran District) and Bali (Buleleng District); **September**: Lampung (Pesawaran District); 8. **Preventive/control measures**: immunostimulant (Vitamin C), vaccination and water quality management;; 9. **Laboratory confirmation**: Main Center for Mariculture, Lampung and Center of Brackishwater Aquaculture, Situbondo; 10. **Publication** : -

3	**Viral encephalopathy and retinopathy (VER)** 1. **Origin of the disease or pathogen**: **July**: Maluku (Ambon City); **August**: Lampung (Pesawaran District), West Nusa Tenggara (West Lombok) and Maluku (Ambon City); **September**: Maluku (Ambon City); 2. **Species affected**: *Plectropomus leopardus* (Egg), *Epinephelus fuscogutattus*, *Lates calcarifer*; 3. **Diseases charateristic**: body ulcers, loss of appetite, schooling on the bottom, whirling, some did not exhibit any clinical sign; 4. **Pathogen**: Betanodavirus; 5. **Mortality rate**: > 60%; 6. **Economic loss**: **July**: Maluku (Ambon City = US $78); **August**: Lampung (Pesawaran District = NA), West Nusa Tenggara (West Lombok = NA) and Maluku (Ambon City = US $ 230); **September**: Maluku (Ambon City = US $123); 7. **Name of infected areas: July**: Maluku (Ambon City); **August**: Lampung (Pesawaran District), West Nusa Tenggara (West Lombok) and Maluku (Ambon City); **September**: Maluku (Ambon City); 8. **Preventive/control measures**: SPF broodstock, reduced stocking density, vaccination, immunostimulant (vitamin C), water quality management.; 9. **Laboratory confirmation**: Center for Mariculture Ambon, Main Center for Mariculture Lampung, Center for Mariculture Lombok; 10. **Publication** : -
4	**Enteric Septicaemia of Catfish** 1. **Origin of the disease or pathogen**: **August:** South Kalimantan (Kapuas District, Banjar District and Banjar Baru City); **September**: South Kalimantan (Banjar District); 2. **Species affected**: *Pangasius* sp.; 3. **Diseases charateristic**: weak swimming on the surface, haemorrhage on fins and tail; 4. **Pathogen**: *Edwardsiella ictaluri*; 5. **Mortality rate**: 30-50%; 6. **Economic loss**: **August**: South Kalimantan (Kapuas District, Banjar District and Banjar Baru City = US $ 615); **September**: South Kalimantan (Banjar District = US $ 384); 7. **Name of infected areas: August:** South Kalimantan (Kapuas District, Banjar District and Banjar Baru City); **September**: South Kalimantan (Banjar District); 8. **Preventive/control measures**: probiotics and water quality management; 9. **Laboratory confirmation**: Center of Freshwater Aquaculture Mandiangin; 10. **Publication** : -

5	**White Spot Disease (WSD)** 1. **Origin of the disease or pathogen**: **July**: Central Java (Rembang District) and South Sulawesi (Pinrang District); **August**: Central Java (Pemalang District), North Sulawesi (North Minahasa District) Gorontalo (North Gorontalo District) West Sulawesi (Mamuju District); **September**: Central Java (Kendal District), Southeast Sulawesi (Konawe District and Kolaka District); 2. **Species affected**: *Penaeus vannamei* and *P. monodon*; 3. **Diseases charateristic**: white spot in carapace and rostrum, necrosis on uropods, reddish muscle; 4. **Pathogen**: White spot syndrome virus; 5. **Mortality rate**: **July**: Central Java (Rembang District = 60%) and South Sulawesi (Pinrang District = 90%); **August**: Central Java (Pemalang District = 60%), North Sulawesi (North Minahasa District = No Mortality) Gorontalo (North Gorontalo District = 5%) West Sulawesi (Mamuju District); **September**: Central Java (Kendal District = 30%), Southeast Sulawesi (Konawe District = 10% and Kolaka District = 10%); 6. **Economic loss** : **July**: Central Java (Rembang District = US $ 1.153) and South Sulawesi (Pinrang District = US $ 5.384); **August**: Central Java (Pemalang District = US $ 5.769), North Sulawesi (North Minahasa District = NA) Gorontalo (North Gorontalo District = NA) and West Sulawesi (Mamuju District); **September**: Central Java (Kendal District = US $ 2.692), Southeast Sulawesi (Konawe District = NA and Kolaka District = NA); 7. **Name of infected areas: July**: Central Java (Rembang District) and South Sulawesi (Pinrang District); **August**: Central Java (Pemalang District), North Sulawesi (North Minahasa District) Gorontalo (North Gorontalo District) West Sulawesi (Mamuju District); **September**: Central Java (Kendal District), Southeast Sulawesi (Konawe District and Kolaka District); 8. **Preventive/control measures**: reduce stocking density, probiotics, immunostimulant, water quality management; 9. **Laboratory confirmation**: Center of Brackishwater Aquaculture Takalar, Main Center of Brackishwater Aquaculture Jepara; 10. **Publication** :
6	**Infectious hypodermal and haematopoietic necrosis (IHHN)** 1. **Origin of the disease or pathogen**: **July:** South Sulawesi (Bulukumba District); **September**: Southeast Sulawesi (Kolaka District); 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: slowand heterogenous growth; 4. **Pathogen**: Infectious hypodermal and haemotopoietic necrosis virus; 5. **Mortality rate**: <30%; 6. **Economic loss** : **July**: South Sulawesi (Bulukumba District = US $ 1.538); **Spetember**: Southeast Sulawesi (Kolaka District = NA); 7. **Name of infected areas: July:** South Sulawesi (Bulukumba District); **September**: Southeast Sulawesi (Kolaka District); 8. **Preventive/control measures**: reduce stocking density and water quality management; 9. **Laboratory confirmation**: Center for Brackishwater Aquaculture Takalar; 10. **Publication** : -

7	**Infectious myonecrosis (IMN)** 1. **Origin of the disease or pathogen: July**: Central Java (Kendal District); **August**: Lampung (South Lampung District) and Bali (Karangasem District); 2. **Species affected**: *Penaeus vannamei*; 3. **Diseases charateristic**: mass mortality, redness in uropod, reddish muscle; 4. **Pathogen**: Infectious myonecrosis virus; 5. **Mortality rate**: **July**: Central Java (Kendal District = 60%); **August**: Lampung (South Lampung District = <30%) and Bali (Karangasem District = NA); 6. **Economic loss** : **July**: Central Java (Kendal District = US $ 3.846); **August**: Lampung (South Lampung District = NA) and Bali (Karangasem District = NA); 7. **Name of infected areas: July**: Central Java (Kendal District); **August**: Lampung (South Lampung District) and Bali (Karangasem District); 8. **Preventive/control measures**: biosecurity, SPF PL, reduce stocking density, probiotics, eradiation and water quality management; 9. **Laboratory confirmation**: Main Center for Brackishwater Aquaculture Jepara, Main Center for Mariculture Lampung and Shrimp Broodstock Center Karangasem, Bali.; 10. **Publication** : -

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

Country: INDONESIA* **Period: October - December 2016**

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)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (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	***	***	***		
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 *Bonamia ostreae*	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)	***	***	***		
2. White spot disease (WSD)	+ ( )	+ ( )	+ ( )	III	4
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	***	+ ( )	***	III	5
5. Infectious myonecrosis (IMN)	+ ( )	***	***	III	6
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		

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AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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 Hervesvirus Disease** 1. **Origin of the disease or pathogen**: **October:** South Kalimantan (Banjar District); November and December: West Java (Sukabumi City); 2. **Species affected**: Common and Koi carp (*Cyprinus carpio);* 3. **Diseases charateristic**: Gill necrosis, body ulcers, lethargy; 4. **Pathogen**: Koi herpesvirus; 5. **Mortality rate**: 10-30%; 6. **Economic loss** : October : South Kalimantan (Banjar District = US $ 77) ; November: West Java (Sukabumi City = US $ 77); December: West Java (Kota Sukabumi = NA); 7. **Name of infected areas: October:** South Kalimantan (Banjar District); November and December: West Java (Sukabumi City); 8. **Preventive/control measures**: immunostimulant (Vitamin C), vaccination and water quality management; 9. **Laboratory confirmation**: Main Center for Freshwater Aquaculture, Sukabumi and Center for Freshwater Aquaculture, Mandiangin; 10. **Publication** : -
2	**Grouper iridoviral disease** 1. **Origin of the disease or pathogen**: **October:** Lampung (South Lampung District); **November and December**: Lampung (Pesawaran District); 2. **Species affected**: groupers (*Epinephelus fuscoguttatus* and *Chromileptes altivelis*); 3. **Diseases charateristic**: pale liver, dark body coloration, swelling of the spleen, spleen artrophy, multifocal necrosis, and granulosis at internal organss; 4. **Pathogen**: Iridovirus; 5. **Mortality rate**: <10% 6. **Economic loss** : N/A; 7. **Name of infected areas: October:** Lampung (South Lampung District); **November and Decembe**r: Lampung (Pesawaran District) 8. **Preventive/control measures**: immunostimulant (Vitamin C), vaccination and water quality management;; 9. **Laboratory confirmation**: Main Center for Mariculture, Lampung; 10. **Publication** : -

3	**Viral encephalopathy and retinopathy (VER)** 1. **Origin of the disease or pathogen**: O**ctober:** Maluku (Maluku City); **November and December**: Maluku (Ambon City); 2. **Species affected**: *Plectropomus leopardus* (Egg), *Epinephelus fuscogutattu* (larvae); 3. **Diseases charateristic**: body ulcers, loss of appetite, schooling on the bottom; 4. **Pathogen**: Betanodavirus; 5. **Mortality rate**: > 60%; 6. **Economic loss**: **October:** (US $ 77); **November**: Ambon (US $ 154); **December**: Ambon (US $ 77); 7. **Name of infected areas: ctober: Maluku (Maluku City); November: Maluku (Ambon City**); 8. **Preventive/control measures**: SPF broodstock, reduced stocking density, vaccination, immunostimulant (vitamin C), water quality management.; 9. **Laboratory confirmation**: Center for Mariculture Ambon; 10. **Publication** : -
4	**White Spot Disease (WSD)** 1. **Origin of the disease or pathogen**: **October:** Central Java (Jepara District); **November**: Central Java (Demak District), Aceh (Bireun District) West Java (Karawang District) and South Sulawesi (Sinjai District); **December**: Lampung (South Lampung District), South Sulawesi (Takalar District), West Java (Karawang District); 2. **Species affected**: *Penaeus vannamei* and *P. monodon*; 3. **Diseases charateristic**: white spot in carapace and rostrum, necrosis on uropods, reddish muscle; 4. **Pathogen**: White spot syndrome virus; 5. **Mortality rate**: **Oct:** 30% (Jepara District); **Nov**: 60% (Demak District), 30%-60% (Bireun District), 30% (Karawang District) and <30% (Sinjai District); **Dec**: <30% (South Lampung District), 30%-60% (Takalar District) and 20% (Karawang District); 6. **Economic loss** : **October:** West Java (Jepara District = US $ 3.846); **November**: Central Java (Demak District = NA); Aceh (Bireun District = US $ 3.846); West Java (Karawang District = NA); **December**: Lampung (South Lampung = NA); South Sulawesi (Takalar District = US $ 6.923); West Java (Karawang District = NA); 7. **Name of infected areas: October:** Central Java (Jepara District); **November**: Central Java (Demak District), Aceh (Bireun District) West Java (Karawang District) and South Sulawesi (Sinjai District); **December**: Lampung (South Lampung District), South Sulawesi (Takalar District), West Java (Karawang District); 8. **Preventive/control measures**: reduce stocking density, probiotics, immunostimulant, water quality management; 9. **Laboratory confirmation**: Center of Brackishwater Aquaculture Takalar, Main Center of Brackishwater Aquaculture Jepara and Center of Brackishwater Aquaculture Ujung Batee and BLUPPB Karawang; 10. **Publication** :

5	**Infectious hypodermal and haematopoietic necrosis (IHHN)** 1. **Origin of the disease or pathogen**: **November:** Central Java (Demak District); 2. **Species affected**: *Penaeus monodon*; 3. **Diseases charateristic**: loss of appetite, slow and heterogenous growth; 4. **Pathogen**: Infectious hypodermal and haemotopoietic necrosis virus; 5. **Mortality rate**: >30%; 6. **Economic loss** : N/A; 7. **Name of infected areas: November:** Central Java (Demak District); 8. **Preventive/control measures**: SPF PL, biosecurity, reduce stocking density, proviotics, immunostimulant, and water quality management; 9. **Laboratory confirmation**: Main Center for Brackishwater Aquaculture Jepara; 10. **Publication** : -
7	**Infectious myonecrosis (IMN)** 11. **Origin of the disease or pathogen: October:** Lampung (South Lampung District); 12. **Species affected**: *Penaeus vannamei*; 13. **Diseases charateristic**: mass mortality, redness in uropod, reddish muscle; 14. **Pathogen**: Infectious myonecrosis virus; 15. **Mortality rate**: <30%; 16. **Economic loss** : N/A; 17. **Name of infected areas: October:** Lampung (South Lampung District); 18. **Preventive/control measures**: SPF PL, reduce stocking density, probiotics, eradiation and water quality management; 19. **Laboratory confirmation**: Center for Fish Disease and Environmental Investigation Serang - Banten, Center for Brackishwater Aquaculture Takalar 20. **Publication** : -

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

Country: JAPAN* **Period: October - December 2016**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	I, III	1
3. Spring viraemia of carp (SVC)	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia (VHS)	-(2016)	-(2016)	-(2016)	I	
5. Infection with *Aphanomyces invadans* (EUS)	-(2015)	-(2015)	-(2015)	I	
6. Red seabream iridoviral disease (RSID)	+	+	-(2016)	II,III	2
7. Koi herpesvirus disease (KHV)	-(2016)	-(2016)	-(2016)	I	
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000	I	
9. Viral encephalopathy and retinopathy	+	+	+	III	3
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*	-(2015)	-(2015)	-(2015)	I	
5. Infection with *Bonamia ostreae*	0000	0000	0000	I	
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	-(2014)	-(2014)	-(2014)	I	
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)	+	-(2016)	+	III	4
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	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	I	
9. Crayfish plague	0000	0000	0000	I	
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000	I	
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	I	

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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.					

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	**Infectious haematopoietic necrosis (IHN)** 1. **Reported in** 9 prefectures; 2. **Species affected** – Amago (*Onchorynchus rhodorus*), yamame (*O. masou*), rainbow trout (*O. mykiss*); 3. **Disease characteristics** – mortality, pale gills, anaemia of gills and kidney, enlargement of kidney and spleen, skin redness, blackening of the body, threadbare fins, exophthalmia; petechial haemorrhages; 4. **Pathogen** – Infectious haematopoietic necrosis virus; 5. **Mortality rate** – 1-35%; 6. **Economic loss** –; 7. **Geographic extent** – Honshu; 8. **Preventive/control measures** – feed restriction; isolation of infected fish, removal of dead fish, disinfection of facilities and tools, egg sterilization; 9. **Laboratory confirmation** – gross clinical observation, PCR, cell culture and isolation of the virus by prefectural research laboratories; 10. **Publications** – None.

2	**Red seabream iridoviral disease (RSID)** 1. **Reported in** 8 prefectures; 2. **Species affected** – red sea bream (*Pagrus major*), great amberjack (*Seriola dumerili*), Bluefin tuna (*Thunnus orientalis*), trevally (*Pseudocaranx dentex*), grouper (*Epinephelus septemfasciatus*), Barred knifejaw (*Oplegnatus fasciatus*); 3. **Disease characteristics** – mortality; petechial haemorrhages in the gills, anemia, enlargement of spleen and kidney; 4. **Pathogen** – Red seabream iridovirus; 5. **Mortality rate** – 1-33%; 6. **Economic loss** –; 7. **Geographic extent** – Honshu, Shikoku, and Kyushu; 8. **Preventive/control measures** – removal of dead fish, movement restriction, feed restriction, notification concerns, administration of vitamins, periodical inspection, vaccination; 9. **Laboratory confirmation** – histopathology, PCR or immunofluorescence antibody test by prefectural or fisheries cooperative research laboratories; 10. **Publications** – None.
3	**Viral encephalopathy and retinopathy (VER)** 1. **Reported in** 2 prefectures; 2. **Species affected** – grouper (*Epinephelus septemfasciatus*), olive flounder (*Paralichthys olivaceaus*); 3. **Disease characteristics** – mortality, abnormal swimming, decrease in feed consumption; 4. **Pathogen** – Betanodavirus; 5. **Mortality rate** – 0-19%; 6. **Economic loss** –; 7. **Geographic extent** – Honshu and Kyushu; 8. **Preventive/control measures** – notification concerns, vaccination; 9. **Laboratory confirmation** – PCR by prefectural research laboratories; 10. **Publications** – None.
4	**White spot disease (WSD)** 1. **Reported in** 1 prefecture; 2. **Species affected** – Kuruma prawn (*Penaeus japonicus*) 3. **Disease characteristics** – mortality, white spots on carapace; 4. **Pathogen** – White spot syndrome virus; 5. **Mortality rate** – 55-77%; 6. **Economic loss** –; 7. **Geographic extent** – Okinawa; 8. **Preventive/control measures** – notification concerns; 9. **Laboratory confirmation** – PCR by prefectural research laboratories; 10. **Publications** – none.

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

Country: MALAYSIA* **Period: October - December 2016**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000	I,II,III	
3. Spring viraemia of carp (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	2
7. Koi herpesvirus disease (KHV)	-	-	-	I,II,III	3
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	4
9. Viral encephalopathy and retinopathy	-	-	-	III	5
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*	?	?	?	III	6
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*					
5. Infection with *Bonamia ostreae*					
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	7
2. White spot disease (WSD)	-	-	-	I,III	8
3. Yellowhead disease (YHD)	-	-	-	I,III	9
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	-	+	I,III	10
5. Infectious myonecrosis (IMN)	-	-	-	I,III	11
6. White tail disease (MrNV)	-	-	-	I,III	12
7. Necrotising hepatopancreatitis (NHP)	-	-	-	I,III	13
8. Acute hepatopancreatic necrosis disease (AHPND)	?	?	?		14
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	?	?	?		15

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AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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 case was detected during DoF active surveillance programme
2	**Red seabream iridoviral disease (RSID)** 1. No positive case was detected during DoF active surveillance programme

3	**Koi herpesvirus disease** 1. **Reported in** one (1) state in one (1) premise. 2. **Species affected** : Koi 3. **Disease characteristics** : Haemorrhage at fins and body 4. **Pathogen** : Koi herpesvirus 5. **Mortality rate** : - 6. **Economic loss** : USD 50,000 7. **Name of affected area** : Freshwater Research Centre, N. Sembilan 8. **Preventive/ control measures taken** : Movement control, quarantined unaffected broodstock and suspension of the release of rearing water. Plan to cull of infected fish and pond disinfection. Juveniles will be destroyed 9. **Laboratory confirmation** : PCR by Biosecurity Lab, KLIA sepang. 10. **Publications** : None
4	**Grouper Iridoviral disease (GIV)** 1. No positive case was detected during DoF active surveillance programme
5	**Viral encephalopathy and retinopathy** 1. No positive case was detected during DoF active surveillance programme
6	**Infection with *Perkinsus olseni*** 1. Suspected by reporting officer but presence not confirmed.
7	**Taura syndrome virus (TSV)** (*Penaeus monodon, Litopenaeus vannamei*) 1. No positive cases were detected during DoF active surveillance programme
8	**White Spot Syndrome Virus (WSSV)** 1. No positive case was detected during DoF active surveillance programme
9	**Yellow head disease (YHV)** (*Penaeus monodon, Litopenaeus vannamei*) 1. No positive case was detected during DoF active surveillance programme
10	**Infectious hypodermal and haematopoietic necrosis virus (IHHNV)** (*Macrobrachium rosenbergi, Penaeus monodon, Litopenaeus vannamei*) 1. No positive case was detected during DoF active surveillance programme
11	**Infectious Myonecrosis (IMNV)** 1. No positive case was detected during DoF active surveillance programme

12	**Macrobrachium rosenbergii Nodavirus (MrNV)** 1. **Reported in** one (1) state in one (1) hatchery 2. **Species affected** : *Macrobrachium rosenbergii* 3. **Disease characteristics** : Tail roots 4. **Pathogen** : *Macrobrachium rosenbergii* Nodavirus 5. **Mortality rate** : - 6. **Economic loss** : 7. **Name of affected area** : Freshwater Research Centre, N. Sembilan 8. **Preventive/ control measures taken** : Disinfection of equipment and suspension of the release of rearing water. 9. **Laboratory confirmation** : IQ2000 by Freshwater Research Centre, N. Sembilan Lab, N. Sembilan. 10. **Publications** : None
13	**Necrotising hepatopancreatitis (NHPB)** 1. No samples were tested for NHPB
14	**Acute hepatopancreatic necrosis disease (AHPND)** 1. Suspected by reporting officer but presence not confirmed. Surveillance programme has been planned and to be carried out in 2017
15	**Hepatopnacreatic Microsporidiosis caused by Enterocytozoon hepatopenaei (HPM-EHP)** 1. Suspected by reporting officer but presence not confirmed. Surveillance programme has been planned and to be carried out in 2017

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

Country: MYANMAR* **Period: October - December 2016**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (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 *Bonamia ostreae*					
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)	+( )	+( )	+( )	III	
6. White tail disease (MrNV)	-	-	-	III	
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-	III	
9. Crayfish plague					
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	***	***	***		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		

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AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					
2. Infection with *Batrachochytrium dendrobatidis*					
ANY OTHER DISEASES OF IMPORTANCE					
1. Parasitic disease					2
2.					

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 39 samples of crustaceans (4 frozen shrimp and 2 soft shell crab for export, and live PL samples of *P. vannamei* (7 samples), *P. monodon* (4 sample) and *M. rosenbergii* (22 samples) for import) for testing, and found that all samples were negative for WSSV, IHHNV, MrNV, and TSV. Some *M. rosenbergii* samples were found positive for MrNV.
2	Visited some fish farms in Yangon, Mandalay and Ayeyarwaddy regions during this period. Parasitic infestations (*Dactylogyrus* spp; *Trichodina* spp.) were found in some farms due to poor water quality.
3	

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

Country: NEW CALEDONIA Period: October - December 2016

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (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*	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 *Bonamia ostreae*	0000	0000	0000	II	
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	III	
2. White spot disease (WSD)	0000	0000	0000	III	
3. Yellowhead disease (YHD)	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	2013	2013	2013	III	
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	0000	0000	0000	III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000	III	
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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	New Caledonia self declaration of free status of IHHNV was published in the OIE Bulletin 2016-2.
2	
3	

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

Country: NEW ZEALAND Period: October - December 2016

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp (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)	0000	0000	0000	III	
7. Koi herpesvirus disease (KHV)	0000	0000	0000	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000	III	
9. Viral encephalopathy and retinopathy	0000	0000	0000	III	
10.Enteric septicaemia of catfish	0000	0000	0000	III	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	- (2016)	+	- (2016)	III	1
2. Infection with *Perkinsus olseni*	- (2016)	- (2016)	- (2016)	III	2
3. Infection with abalone herpesvirus	0000	0000	0000	III	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	III	
5. Infection with *Bonamia ostreae*	- (2016)	- (2016)	- (2016)	III	3
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	III	
7. Acute viral necrosis (in scallops)	0000	0000	0000	III	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000	III	
2. White spot disease (WSD)	0000	0000	0000	III	
3. Yellowhead disease (YHD)	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000	III	
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	0000	0000	0000	III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Crayfish plague	0000	0000	0000	III	
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	0000	0000	0000	III	
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	III	

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000	III	
2. Infection with *Batrachochytrium dendrobatidis*	-(2010)	-(2010)	-(2010)	III	4
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

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	***Bonamia exitiosa*** occurs in commercial oyster beds in Foveaux Strait, where it is highly prevalent and associated with mortalities in mid to late summer. It occurs intermittently around the South Island and in Wellington Harbour (bottom of the North Island), and has been previously reported in *Ostrea chilensis* from Hauraki Gulf, Tauranga, the Marlborough Sounds and Wellington Harbour. Annual monitoring of the presence of *B. exitiosa* infection is undertaken in the flat oyster (*O. chilensis*) population in the Foveaux Strait.
2	***Perkinsus olseni*** was first detected in New Zealand in 1999, in wild wedge shells (*Macomona liliana*). It was then found in wild populations of New Zealand cockles (*Austrovenus stutchburyi*), ark shells (*Barbatia novaezelandiae*) and pipi (*Paphies australis*) in 2000-2001. In July 2013, *P. olseni* was detected for the first time in farmed black foot pāua (*Haliotis iris*), a type of abalone native to New Zealand. Further detections were made in wild *H. iris* populations in 2014. These mollusc species occur widely around the coast of New Zealand, but to date *P. olseni* has only been detected in these species from the Auckland region northwards. *P. olseni* was found for the first time on the South Island in New Zealand green lipped mussels (*Perna canaliculus*) in a land based aquaculture facility in September 2014, and then in wild New Zealand scallops (*Pecten novaezelandiae*) in November 2014. Both of these findings were in the Marlborough region, and were incidental and not associated with mortality events.

3	***Bonamia ostreae*** was detected for the first time in New Zealand flat oysters (*Ostrea chilensis*) in January 2015 on one land based aquaculture facility in the upper South Island and on two marine oyster farms in the Marlborough Sounds (in the northern part of the South Island). New Zealand initiated a response with the objectives of restricting the spread and determining the geographical extent of the infection. Movement controls have been established to regulate the movement of susceptible shellfish species from the upper South Island to the key flat oyster areas of Southland, Otago and the Chatham Islands. Ongoing surveillance detected Infection with *Bonamia ostreae* in wild flat oysters within a movement control area in May of 2016, no clinical signs were associated with the finding.
4	The first isolation of ***Batrachochytrium dendrobatidis*** was made in 1999 in New Zealand. Since then the fungus has been detected both on the North and South Islands in both native and introduced frog species. It is not certain what level of population decline if any, is associated with the presence of the fungus in native frogs.

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

Country: SINGAPORE* **Period: Ocotber - December 2016**

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)	(2016)	(2016)	(2016)		
7. Koi herpesvirus disease (KHV)	(2015)	(2015)	(2015)		
Non OIE-listed diseases					
8. Grouper iridoviral disease	(2014)	(2014)	(2014)		
9. Viral encephalopathy and retinopathy	(2016)	(2016)	(2016)		
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 *Bonamia ostreae*	***	***	***		
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)	(2016)	(2016)	(2016)		
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		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	****	****	****		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	****	****	****		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	****	****	****		

*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	****	****	****		
2. Infection with *Batrachochytrium dendrobatidis*	(2016)	+	+	III	1
ANY OTHER DISEASES OF IMPORTANCE					
1. Megalocytivirus (marine & ornamental fish)	(2016)	+	(2016)	III	2,3
2. *Aeromonas salmonicida* (in goldfish)	0000	0000	0000		

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	***Batrachochytrium dendrobatidis*** **(Bd)** was detected by real-time PCR in skin swabs of wild frogs as part of a joint wildlife Chytrid study with the National Parks Board. The samples were collected from peri-urban parks as well as nature reserves. The frogs all appeared clinically healthy during sampling.
2	**Megalocytivirus** was detected by real-time PCR in diseased threadfin from a coastal fish farm. The fish had exhibited low grade mortality, lethargy and darkened bodies. The virus was identified as Infectious Spleen and Kidney Necrosis Virus (ISKNV) by conventional PCR using OIE primer set 1 (Kurita et al., 1998).

3	**Megalocytivirus** was detected by real-time PCR in diseased grouper from a land-based fish farm. The virus was identified as Infectious Spleen and Kidney Necrosis Virus (ISKNV) by conventional PCR using OIE primer set 1 (Kurita et al., 1998).

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

Country: TAIPEI CHINA Period: October - December 2016

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	-	-	-		
7. Koi herpesvirus disease (KHV)	-	-	+	LDCCs	1
Non OIE-listed diseases					
8. Grouper iridoviral disease	+	+	+	LDCCs	2
9. Viral encephalopathy and retinopathy	+	+	+	LDCCs	3
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 *Bonamia ostreae*	***	***	***		
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)	+	+	+	LDCCs	4
3. Yellowhead disease (YHD)	-	-	-		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+	-	-	LDCCs	5
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
9. Crayfish plague	-	-	-		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	***	***	***		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					

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	1. Tainan city. 2 outbreak reports from 2 farms. 2. Date: (1), (2) Dec 30. 3. Species: (1), (2) Cichlidae. 4. Mortality rate: low. 5. Total number of death: (1), (2) 0/1000.

2	1. Kaohsiung city, Penghu county. 33 outbreak reports from 21 farms. 2. Date: (1) Oct 4; (2) Oct 11; (3) Oct 13; (4) Oct 18; (5), (6), (7) Oct 24; (8), (9) Oct 26; (10) Oct 31; (11) Nov 2; (12) Nov 4; (13), (14), (15) Nov 7; (16) Nov 8; (17) Nov 11; (18), (19) Nov 14; (20) Nov 20; (21), (22), (23) Nov 23; (24) Nov 25; (25) Dec 6; (26) Dec 7; (27), (28), (29) Dec 12; (30) Dec 15; (31) Dec 26; (32) Dec 28; (33) Dec 30. 3. Species: (1), (2), (4), (9), (12), (16), (17), (25), (28), (29), (32), (33) Lates calcarifer; (26) Trachinotus blochii; (3), (7), (8), (11), (13), (14), (15), (18), (19), (22), (30), (31) Epinephelus malabaricus; (10), (23), (27) Epinephelus fuscoguttatus x Epinephelus lanceolatus; (5), (6), (20), (21), (24) Epinephelus lanceolatus. 4. Mortality rate: low. 5. Total number of death: (1), (28), (29), 0/35000; (2), (4), (9), (12), (16), (17), (25), (32), (33) 0/40000; (3), (7), (8), (10), (11), (13), (14), (15), (18), (19), (22), (23), (27), (30), (31) 0/10000; (5), (6), (20), (21), (24) 0/1000; (26) 0/70000.
3	1. Kaohsiung city, Chiayi county, Pintung county. 43 outbreak reports from 35 farms. 2. Date: (1) Oct 4; (2), (3), (4) Oct 11; (5), (6) Oct 22; (7), (8), (9), (10), (11) Oct 26; (12), (13), (14), (15), (16) Oct 29; (17), (18) Oct 31; (19), (20) Nov 7; (21) Nov 11; (22) Nov 14; (23) Nov 15; (24) Nov 22; (25), (26), (27) Nov 23; (28), (29) Nov 25; (30) Nov 28; (31), (32) Dec 6; (33), (34) Dec 12; (35) Dec 22; (36), (37), (38), (39) Dec 26; (40), (41) Dec 28; (42), (43) Dec 30. 3. Species: (1), (9), (18), (19), (20), (22), (23), (31), (32), (39) Epinephelus fuscoguttatus x Epinephelus lanceolatus; (2), (4), (6), (7), (8), (12), (15), (16), (21), (24), (25), (26), (28), (29), (30), (33), (35) Epinephelus malabaricus; (3) Lutjanus argentimaculatus; (5), (10), (11), (13), (14), (17), (27), (34), (36), (37), (38), (40), (41), (42), (43) Epinephelus lanceolatus. 4. Mortality rate: low. 5. Total number of death: (1), (3), (4), (6), (7), (8), (9), (12), (15), (16), (18), (19), (20), (21), (22), (23), (24), (25), (26), (28), (29), (30), (31), (33), (35), (36) 0/10000; (2) 0/150000; (5), (10), (11), (13), (14), (17), (27), (32), (34), (38), (40), (41), (42) 0/1000; (37) 0/2000; (39) 0/20000; (43) 0/1500.
4	1. Tainan city, Taichung city, Chiayi county, Pintung county, Kaohsiung city, Taitung county. 22 outbreak reports from 17 farms. 2. Date: (1) Oct 3; (2), (3), (4) Oct 11; (5), (6) Oct 21; (7) Oct 28; (8), (9) Nov 15; (10), (11), (12) Nov 18; (13) Nov 21; (14) Nov 23; (15) Dec 8; (16) Dec 13; (17), (18) Dec 16; (19) Dec 20; (20) Dec 27; (21), (22) Dec 30. 3. Species: (1), (7) Neocaridina denticulata sinensis; (2) Caridina serrata var.; (3), (14), (15), (21), (22), Litopenaeus vannamei (4), (8), (9), (10), (11), (12), (13), (16), (17), (18), (19), Ornamental shrimps; (5), (6) Penaeus monodon; (20) Caridina multidentata. 4. Mortality rate: low. 5. Total number of death: (1) 0/2000; (2) 0/15000; (3) 0/200000; (4), (11), (20) 0/10000; (5) 150/100000; (6) 10000/300000; (7), (9) 0/100000; (8) 0/130000; (10), (18), (19) 0/80000; (12) 0/40000; (13) 0/150000; (14) 0/300000; (15), (22) 0/500000; (16) 0/8000; (17) 0/30000; (21) 0/1000000.
5	1. Yilan county, Chiayi county, Kaohsiung city. 6 outbreak reports from 6 farms. 2. Date: (1) Oct 3; (2), (3), (4) Oct 4; (5) Oct 21; (6) Oct 30. 3. Species: (1) Marsupenaeus japonicus; (2), (4), (5), (6) Litopenaeus vannamei; (3) Macrobrachium rosenbergii. 4. Mortality rate: low. 5. Total number of death: (1) 0/450000; (2) 0/100000; (3) 0/12000; (4) 0/350000; (5) 100/350000; (6) 120/10000.
6	1. Tainan city. 2 outbreak reports from 2 farms. 2. Date: (1), (2) Dec 30. 3. Species: (1), (2) Cichlidae. 4. Mortality rate: low. 5. Total number of death: (1), (2) 0/1000.

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

Country: THAILAND* **Period: October - December 2016**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp (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. Koi herpesvirus disease (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		
2. Infection with *Perkinsus olseni*	0000	0000	0000	III	
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
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)	-	-	-	III	
2. White spot disease (WSD)	-	-	-	III	
3. Yellowhead disease (YHD)	-	-	-	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	+( )	-	III	1
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	-	-	-	III	
7. Necrotising hepatopancreatitis (NHP)	-	-	-	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	-	+( )	-	III	2
9. Crayfish plague	0000	0000	0000	III	
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	***	***	***		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	-	+( )	-	III	3

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AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(2016)	(2016)	(2016)	III	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: 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 12,439 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 12 specimens or 0.1 % recorded as PCR positive or carrying **IHHNV** genes. Shrimp farm with positive testing results is subjected to health improvement, movement control, eradication and/or farm disinfection.
2	A total of 9,461 shrimp samples from shrimp farms had been tested by PCR assay at the DOF's laboratories under active surveillance, 62 specimens or 0.6 % recorded as PCR positive for **AHPND**. Shrimp farms with positive testing results have been subjected to shrimp health management control and pond improvement.
3	A total of 12,165 shrimp samples from shrimp farms had been tested by PCR assay at the DOF's laboratories under active surveillance, 186 specimens or 1.5 % recorded as PCR positive for **EHP**. Shrimp farms with positive testing results have been subjected to shrimp health management control and pond improvement.

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

Country: VIETNAM* **Period: October - December 2016**

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)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (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	+	+	-	I, II	1
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 *Bonamia ostreae*	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. Yellowhead disease (YHD)	-	-	-		
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		
8. Acute hepatopancreatic necrosis disease (AHPND)	+	+	+	I, III	3
9. Crayfish plague	0000	0000	0000		
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome	-	-	-		
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		

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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					

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	**Enteric Septicaemia of Catfish (*Edwardsiella ictaluri*)** Infection found in intensive catfish (*Pangasius micronema*, *P. hypophthalmus*) farms. The disease occurred in An Giang, Tien Giang, Ben Tre and Dong Thap provinces (84.96 ha).
2	**White Spot Disease (WSD)** **Pathogen**: White spot syndrome virus (WSSV) **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei* (10-100 DOC) **Name of affected area:** reported in 15 provinces (total area 806.44 ha) including Quang Ninh, Nghe An, Ha Tinh, Quang Tri, Khanh Hoa, Ho Chi Minh, Ninh Thuan, Ba Ria-Vung Tau, Long An, Tien Giang, Ben Tre, Tra Vinh, Kien Giang, Bac Lieu 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).

3	**Acute Hepatopancreatic Necrosis Disease (AHPND)** **Pathogen**: *Vibrio parahaemolyticus* with Phage A3 **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei* (10-45 DOC) **Name of affected area:** reported in 23 provinces and caused losses in total shrimp culture area of 1,030.84 ha. Affected provinces include Quang Ninh, Nghe An, Quang Tri, Quang Nam, Binh Dinh, Khanh Hoa, Ho Chi Minh, Ninh Thuan, Ba Ria-Vung Tau, Long An, Tien Giang, Tra Vinh, Ben Tre, Kien Giang, Bac Lieu and Ca Mau. **Mortality rate:** could reach 95% in intensive and semi-intensive farms; **Clinical signs:** shrimps become lethargic with soft, darkened shells, mottling of the carapace. Pathology is 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

Country: FRENCH POLYNESIA Period: October - December 2016

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000	III	
7. Koi herpesvirus disease (KHV)	***	***	***		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	(2005)	(2005)	(2005)	III	1
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	III	2
2. Infection with *Perkinsus olseni*	+	+	+	III	2
3. Infection with abalone herpesvirus					4
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with *Bonamia ostreae*	0000	0000	0000	III	2
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	2
7. Acute viral necrosis (in scallops)					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome (TS)	0000	0000	0000	III	3
2. White spot disease (WSD)	0000	0000	0000	III	3
3. Yellowhead disease (YHD)	0000	0000	0000	III	3
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	(2008)	(2008)	(2008)	III	3
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	3
6. White tail disease (MrNV)	0000	0000	0000	III	3
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	3
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
9. Crayfish plague					4
Non OIE-listed diseases					
10. *Monodon* slow growth syndrome					4
11. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)					4

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					4
2. Infection with *Batrachochytrium dendrobatidis*					4
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

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** was first diagnosed in the breeders of *Lates calcarifer* (1989). In 2004, the disease caused mass mortality in *Platus orbicularis* and *Polydactylus sexifilis* breeders. Since 2005, the experimental hatchery of *P. orbicularis* is biosecured. Only broodstock (sourced from the wild) free of nodavirus are maintained. Annual check of all broodstok and larvae is made. Since 2005, no sample was found positive.
2	**Bonamiosis and Marteiliosis**: not reported since the start of active surveillance in 2003 in *Pinctada margaritifera*. Since January 2012, pearl oyster network has been extended to giant clam and *Perkinsus olseni* was detected by PCR in wild specimen of *Tridacna maxima* (PYF 06-12-12 OIE Alert). *P. olseni* was also detected in *Pinctada margaritifera* (OIE Report 13451, May 14th 2013).

3	In 2008 and 2010, a survey of all production units was conducted and samples (30/unit) were sent out for analysis to Aquaculture Pathology Laboratory, University of Arizona (Prof. Lightner). None of the important shrimp viruses was detected. Positive isolation was last reported in 2001 in *Penaeus vannamei*, a non-indigenous species which is no longer cultivated in the country and considered extinct since 2005. Similar survey was done in 2011 and 2012. In 2013, detection for TS, WSD and IHHN were done in the country, and all results were negative. No mortality was observed in *Litopenaeus stylirostris* during this period.
4	Susceptible species are not present in the country.

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

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Report (Beginning 2016)

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. Koi herpesvirus disease (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 *Bonamia ostreae*	
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. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)
3. Yellowhead disease (YHD)	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	
5. Infectious myonecrosis (IMN)	
6. White tail disease (MrNV)	
7. Necrotising hepatopancreatitis (NHP)	
8. Acute hepatopancreatic necrosis disease (AHPND)	
9. Crayfish plague	
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 *Marteilia refringens*	
2. Infection with *Perkinsus marinus*	

Recent Aquatic Animal Health Related Publications

OIE Aquatic Animal Health Code, 19th Edition, 2016. The OIE Aquatic Animal Health Code (the Aquatic Code) sets out standards for the improvement of aquatic animal health and welfare of farmed fish worldwide, and 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 Competent Authorities of importing and exporting countries for early detection, reporting and control of agents pathogenic to aquatic animals and to prevent their transfer via international trade in aquatic animals and their products, while avoiding unjustified sanitary barriers to trade. The standards 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 19th edition incorporates modifications to the Aquatic Code agreed at the 84th General Session in May 2016. It includes updates of the table of contents and glossary, and revised text included in Chapter 1.1. Notification of diseases and provision of epidemiological information and Chapter 5.1. General obligations related to certification. Chapter 4.3. Disinfection of aquaculture establishments and equipment has been extensively revised and the title amended accordingly. Chapter 9.2. Infection with yellow head virus genotype 1 has been amended to clarify the scope of this chapter and the title revised accordingly. In addition, some minor consequential amendments have been made in Articles 1.4.3., 1.5.2., 2.1.4., 4.2.3. and 4.6.3. to ensure that the use of 'vector' is consistent with the new definition of 'vector'.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, 2016. The purpose of this Manual of Diagnostic Tests for Aquatic Animals (Aquatic Manual) is to provide a uniform approach to the detection of the diseases listed in the OIE Aquatic Code, so that the requirements for health certification in connection with disease prevention and control programmes, and trade in aquatic animals and aquatic animal products can be met. Although many publications exist on the detection and control of aquatic animal diseases, the Aquatic Manual is a key and unique document describing the methods that should be applied to the OIE-listed diseases in aquatic animal health laboratories all over the world, thus increasing efficiency and promoting improvements in aquatic animal health world-wide. The requirements published in this Aquatic Manual are recognised as international standards by the WTO. The manual is available for free download at http://www.oie.int/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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