2019/4

QUARTERLY
AQUATIC ANIMAL DISEASE REPORT
(Asia and Pacific Region)

October – December 2019

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Contents

Foreword

Meetings of *ad hoc* Steering Committee of the Regional Collaboration Framework on Aquatic Animal Health in Asia and the Pacific

Under the Regional Collaboration Framework on Aquatic Animal Health in Asia and the Pacific (hereinafter referred to as "the Framework"), an *ad hoc* Steering Committee was established in July 2019 to materialize and formalize the platform through developing a draft Terms of Reference (ToR) and Work Plan for the Framework. The activities under the Regional Collaboration Framework will be reported to the Regional Commission for Asia, the Far East and Oceania.

The 1st meeting of the *ad hoc* Steering Committee aimed at finalizing the Terms of References for the Framework; understanding the available technical resources and expertise present within OIE Resource Centers (RCs) and other institutions for better resource utilization; and determining the best communication mechanism among OIE RCs, the Framework, member countries (MCs) and stakeholders. More than 25 experts participated in this meeting composed of OIE designated experts from OIE Collaborating Centres, OIE Reference Laboratories, members of the OIE Aquatic Animal Commission, OIE Focal Points for Aquatic Animals as well as representatives of OIE Regional Representation for Asia and the Pacific (RRAP), Network of Aquaculture Centres in Asia-Pacific (NACA) and Southeast Asian Fisheries Development Center (SEAFDEC). Members of NACA Asia Regional Advisory Group on

Aquatic Animal Health (AG) and representatives from host country (Thailand) also participated as observers.

At the end of the meeting, the *ad hoc* Steering Committee agreed to the following activities for the year of 2020:

- The 2nd teleconference of the *ad hoc* Steering Committee should be organised in early February to discuss the implementation details of the flagship activities.
- Evaluation of available test for Acute hepatopancreatic necrosis disease (AHPND) detection.
- Development of ways to draw assistance in identifying experts, causative agents, validate test and control measures for Members with the consultation of the Regional Collaboration Framework and logistic support of OIE RRAP.
- OIE will consider organising regional training on OIE PVS aquatic; members of the Framework will advocate the benefits of the OIE PVS aquatic tool to the governments.
- The secretariat of the Framework (OIE RRAP) will contact the potential candidates and confirm their willingness in leading the activity: collecting existing guidelines and awareness materials on biosecurity and to further refine these documents by evaluating the implementation in small-scaled farms.

To further discuss the technical details and work plan of the agreed activities, the 2nd teleconference of the *ad hoc* Steering Committee was organised on 26 March 2020. A total of 18 participants comprising of 11 members of *ad hoc* Steering Committee and seven observers joined the call. Dr Ingo Ernst gave an update on the OIE General Session and OIE Global Strategy on Aquatic Animal Health in the light of COVID-19 pandemic. The meeting further discussed about the agreed activities and decided to proceed with the following three projects with respective coordinator in brackets:

1) Evaluation of available test for AHPND detection (Dr Grace Lo, OIE designated expert for AHPND);
2) Ways of utilising OIE scientific networks (Dr Ingo Ernst, President of Aquatic Animals Health Standards Commission);
3) Evaluation of existing guidelines and awareness materials on biosecurity for small-scale farms (Dr Eduardo M. Leaño, Coordinator of Aquatic Animal Health Programme, NACA).

More information about the three projects is under preparation and will be published at the OIE RRAP website (https://rr-asia.oie.int/en/our-mission/aquatic-animal-health/).

Reports Received by the NACA and OIE-RRAP

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

Country: AUSTRALIA* **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	-(2012)	-(2012)	-(2012)		1
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000		
3. Infection with spring viremia of carp virus	0000	0000	0000		
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-(2017)	-(2017)	-(2017)		2
6. Infection with red sea bream iridovirus	0000	0000	0000		
7. Infection with koi herpesvirus	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	+(2019)	+(2019)	-(2019)	III	3
10.Enteric septicaemia of catfish	-(2014)	-(2014)	-(2014)		4
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	+(2019)	-(2019)	-(2019)	I	5
2. Infection with *Perkinsus olseni*	-(2019)	-(2019)	-(2019)		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. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	-(2018)	-(2018)	-(2018)		8
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic necrosis virus	-(2019)	-(2019)	-(2019)		9
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-(2008)	-(2008)	-(2008)		10
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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

12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		11
2. Infection with *Batrachochytrium dendrobatidis*	+(2019)	+(2019)	+(2019)		12
3. Infection with *Batrachochytrium salamandrivorans*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. *Hepatopancreatitis* in prawns	-(2017)	-(2017)	-(2017)		13

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 2017), the Northern Territory (last reported 2017), Queensland (last reported 2014), Western Australia (last reported 2013), Victoria (last reported 2012) and South Australia (last reported 2008). Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory.

3	**Viral encephalopathy and retinopathy (VER)** 1. **Reported in** in the Northern Territory in October and November 2019, passive surveillance; 2.**Species affected** – juvenile Gold spot estuarine cod (*Epinephelus coiodes*)(October 2019); 35-day old Barramundi (*Lates calcarifer*) in Facility A and 40-day-old Barramundi (*L. calcarifer*) in Facility B (November 2019) ; 3. **Clinical signs** – affected fish found floating upside down; Subclinical infection in Facility A. Clinical infection in Facility B with affected fish displaying typical neurological signs including spiral swimming behaviour; 4. **Pathogen** – Piscine Betanodavirus; 5. **Mortality rate** – nil; 0% mortality in Facility A and 0.1% mortality in Facility B ; 6. **Economic loss** – nil; 7. **Geographic extent** – Darwin Harbour; Semi-closed aquaculture systems. Affected area in Facility A was the nursery area of the hatchery, consisted of several 5000L to 8000L fibre glass tanks, flow-through culture system. Affected area in Facility B was the nursery area of a grow-out farm, consisted of several 5000L fibre glass tanks and an earthen pond, full recirculation culture system; 8. **Containment measures** – none; Quarantine of clinically affected fish; 9. **Laboratory confirmation** – Histopathology, Piscine Betonodavirus specific qPCR test; 10. **Publications** – nil. Viral encephalopathy and retinopathy is known to occur in Queensland (last reported 2019), New South Wales (last reported 2018), Western Australia (last reported 2013), South Australia (last reported 2010) and Tasmania (last reported 2000). Passive surveillance and never reported in Victoria. No information available this period in the Australian Capital Territory..
4	**Enteric septicaemia of catfish (*E. ictaluri*)** was not reported this period despite 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. It was reported from clinically normal fish from a single river in Queensland (last reported 2014), the only occurance 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; the Northern Territory in a closed aquarium (last reported 2011), and in PC2 containment facilities in Tasmania (last reported 2001) and Queensland (last reported 2008).
5	**Infection with *Bonamia exitiosa*** 1. **Reported in** South Australia in October 2019, passive surveillance; 2. **Species affected** – Austrlaian flat oyster (*Ostrea angasi*) ; 3. **Clinical signs** – sub-clinical; 4. **Pathogen** – *Bonamia exitiosa*; 5. **Mortality rate** – N/A ; 6. **Economic loss** – N/A; 7. **Geographic extent** – marine farmed, grow-out area in Coffin Bay, SA; 8. **Containment measures** – None; 9. **Laboratory confirmation** – smear and qPCR; 10. **Publications** – nil. Infection with *Bonamia exitiosa* is previously known to occur in Western Australia (last reported 2017) and Victoria (last reported 2016). Passive surveillance and never reported 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*** was not reported for this period despite active and passive surveillance for South Australia (last reported 2019), Western Australia (last reported 2018), Victoria (last reported 2015), and New South Wales (last reported 2005). Passive surveillance and not reported for this period for Queensland (last reported 2014). Passive surveillance and never reported in the Northern Territory and Tasmania. No information available for the Australian Capital Territory (no marine water responsibility).
7	**Infection with abalone herpesvirus (abalone viral ganglioneuritis)** was not reported this period despite active and 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, Western Australia. No information available this period in the Australian Capital Territory (no marine water responsibility).
8	**Infection with white spot syndrome virus (white spot disease)** was not reported this period despite targeted surveillance in Queensland (last reported 2018). White spot disease has never been reported despite active and passive surveillance in New South Wales, South Australia, Western Australia and Northern Territory. Never reported in Victoria and Tasmania despite passive surveillance. No information available for the Australian Capital Territory (no marine water responsibility).
9	**Infection with infectious hypodermal and haematopoietic necrosis virus** was reported this period despite passive surveillance in Queensland (last reported 2019) 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 water responsibility) and Tasmania (susceptible species not present).
10	**Infection with *Macrobrachium rosenbergii* nodavirus (White tail disease)** was not reported this period despite passive surveillance in Queensland (last reported 2008). Passive surveillance and never reported in the Australian Capital Territory, New South Wales, the Northern Territory, South Australia, Victoria and Western Australia. No information available this period from 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 and New South Wales. No information available this period in the Australian Capital Territory, South Australia, Victoria and Western Australia.
12	**Infection with *Batrachochytrium dendrobatidis*** 1. **Reported in** in New South Wales in November 2019 from archived samples collected in March 2019, active surveillance; 2. **Species affected** – *Pseudophryne pengilleyi*, *Crinia signifera*; 3. **Clinical signs** – clinically healthy; 4. **Pathogen** – *Batrachochytrium dendrobatidis*; 5. **Mortality rate** – nil; 6. **Economic loss** – none; 7. **Geographic extent** – Micalong Swamp area NSW; 8. **Containment measures** – none, endemic; 9. **Laboratory confirmation** – RT PCR; 10. **Publications** – nil. Infection with *Batrachochytrium dendrobatidis* is known to occur in Queensland (last reported 2018), Victoria (last reported 2016), Tasmania (last reported 2013) and Western Australia (last reported 2008). Passive surveillance and never reported in the Northern Territory. No information available this period in the Australian Capital Territory and South Australia.

13	**Hepatopancreatitis** in prawns was not reported this period despite passive surveillance in Queensland (last reported 2017). Passive surveillance and never reported in New South Wales. No information available in the Australian Capital Territory, Victoria, Northern Territory, South Australia, Western Australia and Tasmania.

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

Nil

Country: CHINESE TAIPEI **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	***	***	***		
2. Infection with infectious haematopoietic necrosis virus	***	***	***		
3. Infection with spring viremia of carp virus	***	***	***		
4. Infection with viral haemorrhagic septicaemia virus	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-		
6. Infection with red sea bream iridovirus	+	-	-	AHRI	1
7. Infection with koi herpesvirus	-	+	+	AHRI	2
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-		
9. Viral encephalopathy and retinopathy	-	-	-		
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	-	-	-		
12. Tilapia lake virus (TiLV)	-	-	-		
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. Infection with Taura syndrome virus	-	-	-		
2. Infection with white spot syndrome virus	-	+	-	AHRI	3
3. Infection with yellow head virus genotype 1	-	-	-		
4. Infection with infectious hypodermal and haematopoietic necrosis virus	-	-	-		
5. Infection with infectious myonecrosis virus	***	***	***		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	-	-	-		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	-	-	-		

11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
3. Infection with *Batrachochytrium salamandrivorans*	***	***	***		
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	1. Pingtung county. 1 outbreak report from 1 farm. 2. Date: (1) Oct 24. 3. Species: (1) *Lates calcarifer*. 4. Mortality rate: low. 5. Total number of death: (1) 15/1400.
2	1. Changhua county, Taoyuan city. 2 outbreak reports from 2 farms. 2. Date: (1) Nov 18, (2) Dec 13. 3. Species: (1), (2) *Cyprinus carpio*. 4. Mortality rate: high. 5. Total number of death: (1) 80/100, (2) 12/25.

3	1. Pingtung county. 1 outbreak report from 1 farm. 2. Date: (1) Nov 5. 3. Species: (1) *Litopenaeus vannamei*. 4. Mortality rate: low. 5. Total number of death: (1) 100/250000.

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

Country: HONG KONG SAR, CHINA* Period: October - December 2019

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. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000	II	
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000	III	
3. Infection with spring viremia of carp virus	0000	0000	0000	III	
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000	III	
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000	III	
6. Infection with red sea bream iridovirus	-	-	-	III	
7. Infection with koi herpesvirus	-	-	-	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	
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
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. Infection with Taura syndrome virus	0000	0000	0000	III	
2. Infection with white spot syndrome virus	-	-	-	III	
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	
4. Infection with infectious hypodermal and haematopoietic necrosis virus	0000	0000	0000	II	
5. Infection with infectious myonecrosis virus	0000	0000	0000	II	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	II	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	***	***	***	II	
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***	II	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	II	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(1 Apr 2017)	(1 Apr 2017)	(1 Apr 2017)	III	
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***	III	
3. Infection with *Batrachochytrium salamandrivorans*	***	***	***	III	
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. New aquatic animal health regulations introduced within past six months (with effective date):

Country: INDIA* **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000		
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000		
3. Infection with spring viremia of carp virus	0000	0000	0000		
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	+()	III	1
6. Infection with red sea bream iridovirus	(2018)	(2018)	(2018)		
7. Infection with koi herpesvirus	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		
11. Carp edema virus disease	-	+()	-	III	2
12. Tilapia lake virus (TiLV)	+()	-	-	III	3
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	-	+()	+()	III	4
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. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	+()	+()	+()	III	5
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic necrosis virus	-	-	+()	III	6
5. Infection with infectious myonecrosis virus	(2019)	(2019)	(2019)		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	+()	+()	+()	III	7

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11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Shrimp haemocyte iridescent virus (SHIV)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	****	****	****		
3. Infection with *Batrachochytrium salamandrivorans*	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 Aphanomyces invadans (EUS)** was observed in *Cirrhinus mrigala* and *Puntius javanicus* in very limited areas of Nagaon district in Assam. *Preventive/Control measures taken:* Treatment with CIFAX was recommended.
2	**Carp edema virus disease** was detected in samples of koi carp Cyprinus carpio collected from two ornamental fish farms: Chennai, Tamil Nadu; and, Kottayam, Kerala. *Preventive/Control measures taken:* The mortalities were under control following treatment of affected fish with 5 ppt salt for one hour with aeration.

3	**Tilapia lake virus (TiLV)** was reported in tilapia from Vaigai reservoir in Theni district of Tamil Nadu. *Preventive/Control measures taken:* No control measure was undertaken as the samples came from reservoir.
4	**Infection with *Perkinsus olsenii*** was detected in wild samples of *Perna viridis* from Kannur and Kozhikode districts, and *Paphia malabarica* from Kannur and Kasargod districts of Kerala. *Preventive/Control measures taken:* No control measure was undertaken as the samples came from the wild.
5	**Infection with White spotsyndrome virus (WSSV)** was reported in *Litopenaeus vannamei* from very limited areas of North 24 Parganas and East Midnapur districts of West Bengal, Nagapattinam district of Tamil Nadu, Uttat Kannada and Dakshina Kannada districts of Karnataka, and Srikakulam, Visakhapatnam, Vizianagram, East Godavari and West Godavari districts of Andhra Pradesh. The infection was also reported in *Scylla serrata* and *Penaeus monodon* from very limited areas of Ernakulam district of Kerala. *Preventive/Control measures taken:* Advised to follow BMPs forcontrolling the disease, implementation of strict biosecurity measures to prevent the spread of pathogen, emergency havesting, drying of ponds, and disinfection before next stocking.
6	**Infection with Infectious hypodermal andhaematopoietic necrosis virus (IHHNV)** was reported in *L. vannamei* from very limited areas of Cuddalore district of Tamil Nadu. *Preventive/Control measures taken:* Adherence to biosecurity measures and stocking with IHHNV-free seeds for the next crop were suggested.
7	**Hepatopancreatic microsporidiosis causedby Enterocytozoon hepatopenaei** was reported in *L. vannamei* from very limited areas of East Midnapur in West Bengal, Nagapattinam, Ramnadu, Pudukkottai, Cuddalore, Thiruvallur and Kanchipuram districts of Tamil Nadu, Vizianagaram, Visakhapatnam, Srikakulam, East Godavari, West Godavari and Nellore districts of Andhra Pradesh, Uttar Kannada and Dakshina Kannada districts of Karnataka, Navsari district of Gujarat, and Mansa, Bathinda and Fazilka districts of Punjab. *Preventive/Control measures taken:* Advised to implement strict biosecurity measures to prevent the spread of pathogen, disinfection of farms with 6 ton of calcium oxide (CaO) per hectare after each harvest, and stocking of EHP-negative seeds in the next crop.

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

Country: IR IRAN* **Period: October - December 2019**

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	+()	+()	+()	III	2
3. Spring viraemia of carp (SVC)	-	-	-		
4. Viral haemorrhagic septicaemia (VHS)	+()	+()	+()	III	1
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	(2015)	(2015)	(2015)		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	0000	0000	0000		
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
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. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	+	+	-	III	3
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic necrosis virus	0000	0000	0000		
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	***	***	***		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	***	***	***		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
3. Infection with *Batrachochytrium salamandrivorans*	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	**Infectious haematopoietic necrosis (IHN)** 1) **Reported** from five farms in four provinces during October to December by implementation of active surveillance; 2) **Species affected:** rainbow trout (*Oncorhynchus mykiss*); 3) **Clinical Signs:** mass mortality, lethargy, swimming with abnormal behavior, pinpoint haemorrhages in visceral organs and pale gills; Clinical signs were dominant in fry and young fish; 4) **Pathogen:** Infectious haematopoietic necrosis virus (related to genogroup E and near to Italian isolates); 5) **Mortality rate:** 30-40% 6) **Economic loss:** – 7) **Names of infected areas:** West part of the country; 8) **Preventive/control measures taken:** zoning and quarantine (ristericton of fish movement) are major actions that were taken; killing of sick fish, disinfection, and fallowing of affected farms were essential measures for disease control; 9) **Laboratories for confirmation:** Realtime-PCR and Cell culture in CVL; 10) **Publications:** None

2	**Viral Haemorrhagic Septicaemia (VHS)** 1) **Reported** from five farms in three provinces during October to December by implementation of both active and passive surveillance; 2) **Species affected:** Rainbow trout (*Oncorhynchus mykiss*); 3) **Disease signs:** mass mortality, lethargy, abnormal swimming, pinpoint haemorrhages in visceral organs and pale gills. Clinical signs were dominanat in fry and young fish; 4) **Pathogen:** Viral haemorrhagic septicaemia virus (isolates were related to genotype IIa); 5) **Mortality rate:** 90% in hatchery, lower percentage in grow-out; 6) **Economic loss:** – 7) **Names of infected areas:** Central part of the country; 8) **Preventive/control measures taken:** zoning and quarantine (ristericton of fish movment) are major actions that were taken; killing of sick fish, disinfection, and fallowing of affected farms were essential measures for disease control; 9) **Laboratory confirmation:** Real time PCR and cell culture in CVL; 10) **Publications:** None
3	**Infection with White spot syndrome virus (WSSV)** 1) **Reported** in four shrimp cultures farms located in Hormozgan Province during October to November by implementation of active surveillance; 2) **Species affected:** *Litopenaeus vannamei*; 3) **Disease signs:** sudden decrease in feeding, swimming near the edge of pond, reddish body and white spot on the cephalothorax, and sudden death; 4) **Pathogen:** White spot syndromevirus; 5) **Mortality rate:** 70% (morbidity is more than 80%); 6) **Economic loss:** – 7) **Names of infected areas:** Central part of the country; 8) **Preventive/control measures taken:** emergency harvest; dead shrimps were properly destroyed; 9) **Laboratory confirmation:** Nested-PCR (IQ 2000 Kits) by sub-national laboratory and CVL; 10) **Publications:** None

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

Country: MYANMAR* **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	***	***	***		
2. Infection with infectious haematopoietic necrosis virus	***	***	***		
3. Infection with spring viremia of carp virus	***	***	***		
4. Infection with viral haemorrhagic septicaemia virus	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Infection with red sea bream iridovirus	***	***	***		
7. Infection with koi herpesvirus					
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
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. Infection with Taura syndrome virus	-	-	-	III	1
2. Infection with white spot syndrome virus	-	-	-	III	1
3. Infection with yellow head virus genotype 1	-	-	-	III	1
4. Infection with infectious hypodermal and haematopoietic necrosis virus	***	***	***	III	
5. Infection with infectious myonecrosis virus	-	-	-	III	1
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-	III	1
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-	III	1
9. Infection with *Aphanomyces astaci* (Crayfish plague)	***	***	***		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					
2. Infection with *Batrachochytrium dendrobatidis*					
3. Infection with *Batrachochytrium salamandrivorans*					
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 76 samples of crustaceans (33 frozen shrimp and 8 soft shell crab, 8 breaded shrimps, 2 salted shrimps and 2 crabs for export), live PLs of *P. vannamei* (17 samples), and *Macrobrachium rosenbergii* (8 samples), and broodstock of *P. vannamei* (2 samples) for import and local testing, and found that all samples were negative for WSSV, MrNV, YHV, IMN, AHPND and TSV.
2	Visited some fish farms in Yangon, Mandalay and Ayeyarwaddy regions during this period. Parasitic infestations (*Dactylogyrus* sp.) were found in some farms due to poor water quality.

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

Country: NEW CALEDONIA **Period: July - September 2019**

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. Infection with epizootic haematopoietic necrosis virus	***	***	***		
2. Infection with infectious haematopoietic necrosis virus	***	***	***		
3. Infection with spring viremia of carp virus	***	***	***		
4. Infection with viral haemorrhagic septicaemia virus	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Infection with red sea bream iridovirus	***	***	***		
7. Infection with koi herpesvirus	***	***	***		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	+	+	+		
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
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*	0000	0000	0000	II	
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	III	
2. Infection with white spot syndrome virus	0000	0000	0000	III	
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	
4. Infection with infectious hypodermal and haematopoietic	2013	2013	2013	III	
5. Infection with infectious myonecrosis virus	0000	0000	0000	III	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	III	
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	III	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	III	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	

12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
3. Infection with *Batrachochytrium salamandrivorans*	***	***	***		
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	

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

Country: NEW CALEDONIA Period: October - December 2019

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. Infection with epizootic haematopoietic necrosis virus	***	***	***		
2. Infection with infectious haematopoietic necrosis virus	***	***	***		
3. Infection with spring viremia of carp virus	***	***	***		
4. Infection with viral haemorrhagic septicaemia virus	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Infection with red sea bream iridovirus	***	***	***		
7. Infection with koi herpesvirus	***	***	***		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	+	+	+		
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
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*	0000	0000	0000	II	
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	III	1
2. Infection with white spot syndrome virus	0000	0000	0000	III	1
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	1
4. Infection with infectious hypodermal and haematopoietic	2013	2013	2013	III	1
5. Infection with infectious myonecrosis virus	0000	0000	0000	III	1
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	III	1
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000	III	1
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	1
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	III	1
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	III	1
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	1

12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	0000	0000	0000	III	1
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	+?	+?		2
3. Infection with *Batrachochytrium salamandrivorans*	***	***	***		
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	For the production campaign 2018-2019 (from September 2018 to August 2019) within the framework of the Epidemiological Surveillance Network for Shrimp in New Caledonia, 122 samples of shrimp were tested by histology. They were all found negatives for all the OIE listed diseases as well for the following non listed diseases: - Hepatopnacreatic Microsporidiosis caused by Enterocytozoon hepatopenaei (HPM-EHP) - Viral covert mortality disease (VCMD) of shrimps - Shrimp haemocyte iridescent virus (SHIV) 665 samples were also tested with negative results by PCR for IHHNV and WSSV. 50 samples were also outsourced and tested with negative results by PCR for TSV, YHV, IMNV, AHPND, MBV, MoV, HPV, EHP, LSNV, and GAV. Since September 2019, 195 samples have already been tested by histology and 345 by PCR for IHHNV and WSSV, all with negative results for all the abovelisted diseases.

2	In the middle of the year 2019, *Litoria gracilenta* was found for the first time in New Caledonia near a Port in the north of the island. Only *Litoria aurea* had been present in Nouvelle-Calédonie before this time (also introduced). Two specimens of this new introduced species were sent to the Institute For Conservation Research in San Diego Zoo, for testing. The result was received in November and one of the frogs was found postitive to *Batrachochytrium dendrobatidis* and the other doubtful. Both frog samples were negatives to *Ranavirus*. Infection by *Batrachochytrium dendrobatidis* has never been declared in NC. The impact on NC amphibians is low, as no other amphibians than *Litoria aurea* are present, but a survey should be done this year on this local species to check if this fungus has spread or if it was only on the introduced specimen. 6 specimens of *Litoria gracilenta* were found between July and October, but no more after this date despite the numerous inspections done (especially after the rain).

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

Country: NEW ZEALAND **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000	III	
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000	III	
3. Infection with spring viremia of carp virus	0000	0000	0000	III	
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000	III	
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000	III	
6. Infection with red sea bream iridovirus	0000	0000	0000	III	
7. Infection with koi herpesvirus	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	
11. Carp edema virus disease	0000	0000	0000	III	
12. Tilapia lake virus (TiLV)	0000	0000	0000	III	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	- (2019)	- (2019)	- (2019)	III	1
2. Infection with *Perkinsus olseni*	+	- (2019)	- (2019)	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*	- (2019)	- (2019)	- (2019)	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. Infection with Taura syndrome virus	0000	0000	0000	III	
2. Infection with white spot syndrome virus	0000	0000	0000	III	
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	
4. Infection with infectious hypodermal and haematopoietic	0000	0000	0000	III	
5. Infection with infectious myonecrosis virus	0000	0000	0000	III	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	III	
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	III	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	III	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	

12. *Spiroplasma eriocheiris* infection	0000	0000	0000	III	
13. Shrimp haemocyte iridescent virus (SHIV)	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
3. Infection with *Batrachochytrium salamandrivorans*	0000	0000	0000	III	
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, Southland 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 (southern end of the North Island) and the North Island. Previous reports of detection in Ostrea chilensis have been from Hauraki Gulf (Auckland region), Tauranga (Bay of Plenty region), 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	**Infection with *Perkinsus olsenii*** 1. **Reported in** outh Island, New Zealand in October 2019 via passive surveillance; 2. **Species affected** – green lipped mussel *(Perna canaliculus)*; 3. **Clinical signs** – low level; 4. **Pathogen** – *Perkinsus olsenii*; 5. **Mortality rate** – N/A; 6. **Economic loss** – N/A; 7. **Geographic extent** – one land-based facility in South Island, New Zealand; 8. **Containment measures** – N/A; 9. **Laboratory confirmation** – histopathology (Cawthron Institute)and specific real time PCR (Investigation and Diagnostic Centre - Wallaceville); 10. **Publications** – nil. *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*), an abalone species 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. *Perkinsus 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. In November 2017, passive surveillance detected *P. olseni* from New Zealand scallops in two sites within Kaipara harbour, Auckland region, and again was thought to be incidental and not associated with significant pathology in scallops. In August 2018, there was another incidental finding of *P. olseni* in farmed green lipped mussels (Perna canaliculus) in the Coromandel region (North Island), that was not associated with mortalities. In October 2019, *P. olseni* was detected in *P. canaliculus* in a land based aquaculture facility that were experiencing low level mortalities. It remains unknown if *P. olseni* was related to the mortalities in *P. canaliculus* in this case.
3	**Infection with *Bonamia ostreae*** was detected for the first time in New Zealand flat oysters (Ostrea chilensis) in January 2015. It was found in two regions in the northern part of the South Island: on one land-based aquaculture facility in the Nelson region, and on two marine farms in the Marlborough region. Since that time, movement controls have been in place to regulate the movement of susceptible shellfish from the northern regions of the South Island and active surveillance has been conducted for the purposes of early detection of spread. In 2016, B. ostreae was detected in both farmed and wild flat oysters within the Marlborough region (the same region as initially reported), and was associated with pathology and mortality in the farmed population. In May 2017 surveillance detected B. ostreae in marine flat oyster farms in Big Glory Bay, Stewart Island (situated in the Southland region, at the southern end of the South Island). No clinical signs or elevated mortality was observed in association with B. ostreae in farmed flat oysters in Big Glory Bay. Following this detection, movement controls to manage risk movements from Stewart Island were issued, and depopulation of all flat oyster farms within areas where B. ostreae had been detected commenced. Depopulation of farms in Big Glory Bay commenced on the 19 June 2017 and was completed September 2017. Depopulation of farms in Marlborough Sounds commenced on the 11 July and was completed in December 2017. In September 2019, surveillance detected B. ostreae in one wild flat oyster in Big Glory Bay, Stewart Island. No clinical signs were observed in association with this wild flat oyster.
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: PHILIPPINES* **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000		
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000		
3. Infection with spring viremia of carp virus	0000	0000	0000		
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-	I	1
6. Infection with red sea bream iridovirus	0000	0000	0000	I, III	2
7. Infection with koi herpesvirus	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	(2008)	(2008)	(2008)		
9. Viral encephalopathy and retinopathy	-	-	-	I, III	3
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	0000	0000	0000		
12. Tilapia lake virus (TiLV)	+	-	-	I, 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	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
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. Infection with Taura syndrome virus	0000	0000	0000	III	5
2. Infection with white spot syndrome virus	+	+	+	III	6
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	7
4. Infection with infectious hypodermal and haematopoietic	+	+	+	III	8
5. Infection with infectious myonecrosis virus	0000	0000	0000	III	9
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	III	
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000	III	10
8. Acute hepatopancreatic necrosis disease (AHPND)	+	+	-	III	11
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	-	-	+	III	12
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Shrimp haemocyte iridescent virus (SHIV)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
3. Infection with *Batrachochytrium salamandrivorans*	***	***	***		
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 *Aphanomyces invadans* (EUS)** EUS was not detected by gross morphological examinations in *Anguilla* spp. and Tilapia from Agusan del Norte, Batangas, Metro Manila, Nueva Ecija and Rizal. Examinations were conducted by BFAR Central Fish Health Laboratory.
2	**Red Seabream Iridoviral Disease (RSID)** Milkfish (adult), Seabass (adult), Snapper (adult), and Tilapia (grow-out and fingerlings) analyzed using PCR test showed negative results for Red Seabream Iridoviral disease. Samples were collected from Bulacan, Camarines Sur, Davao del Sur, Guimaras, Iloilo, Negros Occidental, Nueva Ecija, Pampanga and Rizal. Examinations were conducted by BFAR and Southeast Asian Fisheries Development Center (SEAFDEC) Fish Health Laboratories.

3	**Viral Encephalopathy and Retinopathy (VER)** Milkfish (adult), Pompano (adult), Seabass (adult), Snapper (adult), and Tilapia (grow-out and fingerlings) analyzed using PCR test showed negative results for Viral Encephalopathy and Retinopathy. Samples were collected from Agusan del Norte, Bulacan, Butuan City, Camarines Sur, Davao del Sur, Guimaras, Iloilo, Negros Occidental, Nueva Ecija, Pampanga and Rizal. Examinations were conducted by BFAR and SEAFDEC Fish Health Laboratories.
4	**Tilapia Lake Virus (TiLV)** **Origin of the disease or pathogen (history of the disease)-** detected in 1 farm **Species affected:** Tilapia (grow-out) **Pathogen:** Tilapia Lake Virus **Size of infected areas or names of infected areas:** Bulacan **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central Fish Health Laboratory
5	**Taura Syndrome (TS)** *Penaeus vannamei* (grow-out) and *P. monodon* (grow-out) analyzed using PCR test showed negative results for Taura Syndrome. Samples were collected from Bohol, Cagayan, Camarines Norte, and Oriental Mindoro. Examinations were conducted by BFAR Fish Health Laboratory.Oriental, Negros Occidental, Negros Oriental, Palawan, Surigao del Sur and Zambales. Other samples examined were imported from Hawaii. Examinations were conducted by BFAR Central Fish Health Laboratory.
6	**White Spot Disease (WSD)** **Origin of the disease or pathogen (history of the disease)-** detected in 9 farms **Species affected:** *P. monodon* (grow-out), *P. vannamei* (juvenile, post-larvae and grow-out), and *Scylla serrata* (broodstock) **Pathogen:** White Spot Syndrome Virus **Size of infected areas or names of infected areas:** Agusan del Norte, Albay, Bohol, Bulacan, Cebu, Iloilo, Negros Oriental, South Cotabato, and Zamboanga; **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR and SEAFDEC Fish Health Laboratories
7	**Yellow Head Virus (YHV)** *P. vannamei* (post-larvae and grow-out) and *P. monodon* analyzed using PCR test showed negative results for Yellow Head Virus. Samples were collected from Bohol, Cagayan, Camarines Norte, Cebu and Oriental Mindoro. Examinations were conducted by BFAR Fish Health Laboratory.
8	**Infectious Hypodermal and Heamatopoietic Necrosis (IHHNV)** **Origin of the disease or pathogen (history of the disease) –** detected in 3 farms **Species affected:** *P. vannamei* (post-larvae and grow-out) and *P. monodon* (grow-out); **Pathogen:** Infectious Hypodermal and Heamatopoietic Necrosis Virus **Size of infected areas or names of infected areas:** Cagayan, Bohol, and Iloilo; **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR and SEAFDEC Fish Health Laboratory

9	**Infectious Myonecrosis (IMN)** *P. vannamei* (grow-out) and *P. monodon* (grow-out) analyzed using PCR test showed negative for Infectious Myonecrosis. Samples were collected from Bohol, Cagayan, Camarines Norte, Cebu and Oriental Mindoro. Examinations were conducted by BFAR and SEAFDEC Fish Health Laboratories.
10	**Necrotising Hepatopancreatitis (NHP)** *P. vannamei* (grow-out) and *P. monodon* analyzed using PCR test showed negative for Necrotising Hepatopancreatitis. Samples were collected from Cagayan and Oriental Mindoro. Examinations were conducted by BFAR Fish Health Laboratory.
11	**Acute Hepatopancreatic Necrosis Disease (AHPND)** **Origin of the disease or pathogen (history of the disease) –** detected in 2 farms **Species affected:** *P. vannamei* (grow-out) **Pathogen:** AHPND *Vibrio parahaemolyticus* **Size of infected areas or names of infected areas:** Cebu; **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR and SEAFDEC Fish Health Laboratory
12	**Hepatopancreatic Microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)** **Origin of the disease or pathogen (history of the disease) –** detected in 1 farm; **Species affected:** *P. monodon* (grow-out); **Pathogen:** *Enterocytozoon hepatopenaei* **Size of infected areas or names of infected areas:** Iloilo; **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / SEAFDEC Fish Health Laboratory

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

Country: SINGAPORE* **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000		
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000		
3. Infection with spring viremia of carp virus	0000	0000	0000		
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Infection with red sea bream iridovirus	(2019)	(2019)	(2019)		
7. Infection with koi herpesvirus	(2019)	(2019)	(2019)		
Non OIE-listed diseases					
8. Grouper iridoviral disease	(2014)	(2014)	(2014)		
9. Viral encephalopathy and retinopathy	(2019)	(2019)	(2019)		
10.Enteric septicaemia of catfish	***	****	****		
11. Carp edema virus disease	***	****	****		
12. Tilapia lake virus (TiLV)	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	****	****	****		
2. Infection with *Perkinsus olseni*	****	****	****		
3. Infection with abalone herpesvirus	****	****	****		
4. Infection with *Xenohaliotis californiensis*	****	****	****		
5. Infection with *Bonamia ostreae*	****	****	****		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	****	****	****		
7. Acute viral necrosis (in scallops)	****	****	****		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	(2018)	(2018)	(2018)		
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic necrosis virus	0000	0000	0000		
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	***	***	***		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	***	***	***		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Shrimp haemocyte iridescent virus (SHIV)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	(2018)	(2018)	(2018)		
3. Infection with *Batrachochytrium salamandrivorans*	(2018)	(2018)	(2018)		
ANY OTHER DISEASES OF IMPORTANCE					
1. *Streptococcus* sp. (Asian seabass)	(2019)	+	(2019)	II	1
2. *Streptococcus iniae* (Red snapper)	(2019)	+	(2019)	III	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	Gram-positive coccoid entities compatible with ***Streptococcus* sp**. were detected from the histopathology analysis of a batch of diseased Asian seabass submitted by an off-shore netcage farm. The farm's attending veterinarian was promptly informed of the diagnosis.
2	***Streptococcus iniae*** was detected by bacterial isolation and PCR from a batch of diseased Red snapper fingerlings submitted by an offshore Recirculating Aquaculture System (RAS) facility. Concurrently the fish were infected with the ciliate *Cryptocaryon irritans*. Due to the high mortality and morbidity situation, the farm carried out a complete de-stocking of the infected batch with treatment and removal of the parasites, and informed that they would consider vaccination as a preventative strategy for future batches.

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

Country: VIETNAM* **Period: October - December 2019**

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. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000		
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000		
3. Infection with spring viremia of carp virus	0000	0000	0000		
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-		
6. Infection with red sea bream iridovirus	0000	0000	0000		
7. Infection with koi herpesvirus	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, III	1
11. Carp edema virus disease	0000	0000	0000		
12. Tilapia lake virus (TiLV)	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	(2013)	(2013)	(2013)		
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. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	+()	+()	+()	I, III	2
3. Infection with yellow head virus genotype 1**	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic necrosis virus	0000	0000	0000		
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	+()	+()	+()	I, III	3
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		

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

**Since 2015, "-" was used for YHV in Vietnam (YHV was replaced by YHV1 from 2019). After recent verification of the YHV genotype detected since 2015, it was found that the YHV genotype was actually GAV. Therefore, the code for YHV1 is changed to "0000" starting from third quarter of 2019, which means that YHV1 is never reported in Vietnam.

Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Shrimp haemocyte iridescent virus (SHIV)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
3. Infection with *Batrachochytrium salamandrivorans*	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 some small scale catfish (*Pangasius micronema*, *P. hypophthalmus*) farms.

2	**Infection with white spot syndrome virus (White Spot Disease; WSD)** **Pathogen**: White spot syndrome virus (WSSV) **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei;* **Name of affected area:** reported and limited in some small scale farms with low biosecurity control. Shrimps were affected at 10-100 days after stocking; **Mortality rate:** average to high; **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, cleaning and disinfection of infected ponds and farming tools 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 and limited to some small-scale farms with low biosecurity control. **Mortality rate:** ; **Clinical signs:** shrimps become lethargic with soft, darkened shells, mottling of the carapace. Pathology is limited to hepatopancreas. **Control measures:** early harvest, strict isolation of infected ponds from movement and transport controls, cleaning and disinfection of infected ponds and farming tools using Calcium hypochlorite (chlorine).

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

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Report (Beginning 2019)

1. DISEASES PREVALENT IN THE REGION	
1.1 FINFISH DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with epizootic haematopoietic necrosis virus	1.Grouper iridoviral disease
2. Infection with infectious haematopoietic necrosis virus	2.Viral encephalopathy and retinopathy
3. Infection with spring viremia of carp virus	3.Enteric septicaemia of catfish
4. Infection with viral haemorrhagic septicaemia virus	4. Carp edema virus disease
5. Infection with *Aphanomyces invadans* (EUS)	5. Tilapia lake virus disease
6. Infection with red sea bream iridovirus	
7. Infection with koi herpesvirus	
1.2 MOLLUSC DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia exitiosa*	1. Infection with *Marteilioides chungmuensis*
2. Infection with *Perkinsus olseni*	2. 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. Infection with Taura syndrome virus	1. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)
2. Infection with white spot syndrome virus	
3. Infection with yellow head virus genotype 1	2. Viral covert mortality disease (VCMD) of shrimps
4. Infection with infectious hypodermal and haematopoietic necrosis	3. *Spiroplasma eriocheiris* infection
5. Infection with infectious myonecrosis virus	4. Shrimp haemocyte iridescent virus (SHIV)
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	
8. Acute hepatopancreatic necrosis disease (AHPND)	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	
1.4 AMPHIBIAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Ranavirus*	
2. Infection with *Bachtracochytrium dendrobatidis*	
3. Infection with *Batrachocytrium salamandrivorans*	
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, 22nd Edition, 2019. The OIE Aquatic Animal Health Code (the Aquatic Code) provides standards for the improvement of aquatic animal health worldwide. It also includes standards for the welfare of farmed fish and use of antimicrobial agents in aquatic animals. The sanitary measures in the Aquatic Code should be used by the Competent Authorities of importing and exporting countries for early detection, reporting and control of pathogenic agents in aquatic animals (amphibians, crustaceans, fish and molluscs) and to prevent their spread 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 22nd edition incorporates modifications to the Aquatic Code agreed at the 87th General Session in May 2019. This edition includes the following updates: Glossary: revised definition for 'basic biosecurity conditions'; Chapter 1.5. 'Criteria for listing species as susceptible to infection with a specific pathogen'; Chapter 8.3. 'Infection with Ranavirus'; Chapter 9.1. 'Acute hepatopancreatic necrosis disease'; Articles 10.2.1. and 10.2.2. of Chapter 10.2. 'Infection with Aphanomyces invadans'; Article 10.5.2. of Chapter 10.5.' Infection with salmonid alphavirus'; Articles 10.6.1., 10.6.2. and 10.6.8. of Chapter 10.6. 'Infection with infectious haematopoietic necrosis virus'; Article 10.7.2. of Chapter 10.7. 'Infection with koi herpesvirus'; Article 10.9.2. of Chapter 10.9. 'Infection with spring viraemia of carp virus'; Article X.X.8. of all disease-specific chapters (except for Article 10.3.8. of Chapter 10.3. 'Infection with Gyrodactylus salaris' due to the nature of the pathogenic agent) and Article 10.4.12. of Chapter 10.4. 'Infection with infectious salmon anaemia virus'. The Aquatic Animal Health Code is available for free download http://www.oie.int/en/standard-setting/aquatic-code/access-online/

OIE Manual of Diagnostic Tests for Aquatic Animals, 2019. The purpose of the Manual of Diagnostic Tests for Aquatic Animals (the Aquatic Manual) is to provide a standardised approach to the diagnosis of the diseases listed in the Aquatic Code, to facilitate health certification for trade in aquatic animals and aquatic animal products. Although there are many publications on the diagnosis and control of aquatic animal diseases, the Aquatic Manual is a key reference document describing the methods relevant to the OIE-listed diseases and other important diseases for use by aquatic animal health laboratories around the world. Adoption of the specified methods will help to increase efficiency of laboratories and to promote improvements in aquatic animal health world-wide.The manual is available for free download at http://www.oie.int/en/standard-setting/aquatic-manual/access-online/

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

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

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

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

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

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

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

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

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

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

Please use the following symbols to fill in the forms.

A. Symbols used for negative occurrence are as follows:

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

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

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

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

B. Symbols used for positive occurrence are shown below.

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

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

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

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

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

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

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

C. Levels of Diagnosis

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

D. Subjects to be covered in the Epidemiological Comments

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

IMPORTANT

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

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

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Notes

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