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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

January-March 1999

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Contents

Foreword

This is the third issue of the Asia-Pacific Quarterly Aquatic Animal Disease Report, covering the first quarter period January to March 1999.

It is very encouraging to see a great improvement in the quality of reports as well as an increase in the number of countries which submitted reports for this period. The National Coordinators and focal persons for this reporting system are commended for their efforts and cooperation in putting this regional reporting system in place.

Several participating countries are now in the process of further developing their national reporting and surveillance system for aquatic animal diseases, a clear indication of the support being generated by the Regional Programme on Aquatic Animal Health. The national reporting and surveillance system, through its 'feedback loop mechanism,' will provide the vital link to farmers who should ultimately be the beneficiaries of this programme. This systematic process of collecting information on the presence of important diseases and pathogens can produce meaningful reports on the disease status of a farm, a zone, country and region. It is from the national reporting system of participating countries that the regional reporting system will be derived.

Countries participating in this reporting system will continuously benefit in terms of attracting international report to enhance national capabilities in disease diagnosis and disease reporting and to establish control measures for important production limiting and trade restricting diseases.

This international cooperative approach to disease diagnosis, reporting and control is one of the keys, if not the only strategy, to reduce the impacts of transboundary spread of aquatic animal pathogens.

Reports Received by the NACA Secretariat

Country: **Australia** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	-(1996)	-(1996)	-(1996)	1
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	2
5. Viral encephalopathy and retinopathy	-(1998)	+	+	3
6. Epizootic ulcerative syndrome (EUS)	-(1998)	+	+	4
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	-(1996)/0000	-(1996)/0000	-(1996)/0000	5
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000/-(1998)	0000/-(1998)	0000/-(1998)	6
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000/ -(1996)	0000/-(1996)	0000/-(1996)	7
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000/-(1997)	0000/-(1997)	0000/-(1997)	8
Crustacean disease				
1. Yellowhead disease*	0000	0000	0000	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	0000	0000	0000	
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	***	***	***	9
6. Spawner mortality syndrome(‘Midcrop mortality syndrome’)	***	***	***	10
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000/0000	0000/0000	0000/0000	
Any other diseases of importance[b]				
Pilchard Herpes Virus	+	+	+	11
Crayfish plaque	0000	0000	0000	12
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments: Australia

Comment No.	
1	EHN not reported during this period but known to have occurred in Victoria (last year 1996), and New South Wales (last year 1996). Targeted active surveillance and never reported in Tasmania, Western Australia. Passive surveillance in Victoria, New South Wales and South Australia. Passive surveillance and never reported in Northern Territory and Queensland. Annual occurrence detected when doing general fish ecology surveys.
2	Reported in February and March in Queensland, based on histology and limited electron microscopy. Not reported in South Australia since an isolated outbreak in July 1998 despite active surveillance by histology. Not report during this period but known to have occurred in Northern territory last year 1997) (passive surveillance). Passive surveillance and never reported in New South Wales, Tasmania, Victoria and Western Australia. No information available in the Australian Capital Territory.
3	Passive surveillance and never reported from New South Wales, Northern territory, Queensland, Victoria, South Australia and Western Australia. Aquabirna virus first isolated during active targeted surveillance in 1998 remains restricted to a limited geographical area. General conclusions from the results of experiments conducts so far are that the aquatic burnavirus is non-pathogenic for Atlantic salmon and brook trout. No information available for the Australian Capital Territory.
4	Reported from Queensland in February and March (histology; isolation of fungus unsuccessful). Not report but known to have occurred earlier in 1998 in Northern Territory and Western Australia, and in 1997 in New South Wales (passive surveillance in all three states). Passive surveillance and never reported in South Australia and Victoria. Passive surveillance and last suspected but not confirmed in Tasmania in 1981. No information available in the Australia Capital Territory.
5	*Bonamia* species: Not reported during this period but known to have occurred in Victoria (last year 1993), Western Australia (last year 1995) and Tasmania (last year 1996). Regarded as enzootic in Tasmania. Passive surveillance and never reported in New South Wales, Northern Territory, Queensland and South Australia. No information available in the ACT (not marine water responsibility). *Bonamia ostreae*: Passive surveillance and never reported in New South Wales, Northern Territory, Queensland, South Australia, Victoria and Western Australia. Never reported in Tasmania. No information available in the Australia Capital Territory (no marine water responsibility).
6	*Marteilia refringens:* Active surveillance and never reported in Tasmania. Passive surveillance and never reported in New South Wales, Northern Territory, Queensland, South Australia, Victoria and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility). *Marteilia sydneyi*: Not reported during this period (despite targeted active surveillance) but known to have occurred earlier in 1998 in New South Wales. Considered enzootic in Queensland, but lack of diagnostic submissions. Not reported during this period but known to have occurred in Western Australia (last year 1994). Active surveillance and never reported in Tasmania. Passive surveillance and never reported in Northern Territory, South Australia and Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
7	*M. mackini*: Active surveillance and never reported in Tasmania. Passive surveillance and never reported in New South Wales, Northern Territory, Queensland, South Australia, Victoria, and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility). *M. roughleyi*: Not reported during this period but known to have occurred in New South Wales (last year 1996) and Western Australia (last year 1996). Considered enzootic in Queensland but lack of diagnostic submissions. Passive surveillance and never reported in South Australia, Victoria and Northern Territory. No information available in the Australian Capital Territory (no marine water responsibility).
8	*P. marinus*: Active surveillance and never reported in Tasmania. Passive surveillance and never reported in New South Wales, Northern Territory, Queensland, South Australia, Victoria and Western Australia. No information available for the Australian Capital Territory (no marine water

	responsibility). *P. olseni*: Not reported during this period but known to have occurred in New South Wales, South Australia and Western Australia (last year 1995). Active surveillance and never reported in Tasmania. Passive surveillance and never reported in Northern Territory, Queensland and Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
9	The relationship between 'Gill Associated Virus' GAV and 'Lymphoid Organ Virus' LOV is unclear to the extent that even the existence of GAV-as a separate and distinguishable virus –is questionable. There is no specific detection test for GAV. The research detection test (a RT-PCR test) recognised LOV. LOV appears widespread in healthy and wild *Penaeus monodon* in Queensland. LOV is considered part of the Mid-crop Mortality Sydrome, but its role in MCMS pathogenesis is unclear.
10	'Midcrop Mortality Syndrome' MCMS is general term used to describe presumed virus associated mortality in pond reared prawns. Several viral agents have been associated with MCMS outbreaks, including 'Spawner-isolated Mortality Virus' SMV ('Spawner Mortality Syndrome').
11	Pilchard herpesvirus reported from Western Australia.
12	Testing since 1989 has been negative

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

Country: **Bangladesh** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	0000	0000	0000	
6. Epizootic ulcerative syndrome (EUS)	+	+	+	1
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*	0000	0000	0000	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	+	+	+	2
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	0000	0000	0000	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	Snake head, catfish, eel and carps are reported to be affected in almost all over Bangladesh.
2	*Penaeus monodon* is affected in several thanas of coastal region.

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

Country: **Cambodia** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	+	+	+	
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	0000	0000	0000	
6. Epizootic ulcerative syndrome (EUS)	+	+	+	
7. Bacterial kidney disease	+	+	+	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	-	-	-	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*	-	-	-	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	-	-	-	
4. Baculoviral midgut gland necrosis				
5. Gill associated virus (GAV)	-	-	-	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	0000	0000	0000	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance [b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
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Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

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***	No information available
0000	Never reported
-	Not reported (but disease is known to occur)
(year)	Year of last occurrence

1. Epidemiological comments:

Comment No.	

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

Country: **People's Republic of China** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	-	-	-	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	0000	0000	0000	
6. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*	***	***	***	
2. Infectious hypodermal and haematopoietic necrosis	***	***	***	
3. White spot disease*	+?	+?	+(Southern China)	1
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	White sport syndrome virus was detected from several kinds of crustacean animals in shrimp ponds by PCR-gene probe technique in Shandong province, but there is no cultured shrimp in the ponds during this season. The disease was reported in the Southern China with the information feedback of distributed WSSV gene probe detection kit.

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

No new regulations introduced

Country: **Hong Kong SAR** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	***	***	***	
6. Epizootic ulcerative syndrome (EUS)	***	***	***	
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	***	***	***	
2. Infectious hypodermal and haematopoietic necrosis	***	***	***	
3. White spot disease*	***	***	***	
4. Baculoviral midgut gland necrosis	***	***	***	
5. Gill associated virus (GAV)	***	***	***	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	

2. New aquatic animal health regulations introduced within past six months (with effective date)
No new regulations introduced.

Country: **India** Period: **January-March 1999**

Item	Disease status[a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	0000	0000	0000	
6. Epizootic ulcerative syndrome (EUS)	+	+	+	
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*	***	***	***	
2. Infectious hypodermal and haematopoietic necrosis	***	***	***	
3. White spot disease*	+()	+()	+()	
4. Baculoviral midgut gland necrosis	***	***	***	
5. Gill associated virus (GAV)	***	***	***	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	The outbreak of EUS disease coincides with the onset of monsoon. Bottom dwelling native species belonging to genus *Channa* and *Puntius* are more prone to this disease. The symptoms include deep ulcers on the body, especially on the snout and below the dorsal fin region.
2	White spot disease was noticed on shrimp even at 30 days of culture. Sporadic incidences of this disease were reported in some coastal shrimp farms.

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

Country: **Indonesia** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*				
2. Infectious haematopoietic necrosis*				
3. *Oncorhynchus masou* virus disease*				
4. Infectious pancreatic necrosis				
5. Viral encephalopathy and retinopathy				
6. Epizootic ulcerative syndrome (EUS)				
7. Bacterial kidney disease				
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*				
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*				
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*				
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*				
Crustacean disease				
1. Yellowhead disease*				
2. Infectious hypodermal and haematopoietic necrosis				
3. White spot disease*				
4. Baculoviral midgut gland necrosis				
5. Gill associated virus (GAV)				
6. Spawner mortality syndrome('Midcrop mortality syndrome')				
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*				
2. Viral haemorrhagic septicaemia*				
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*				
Any other diseases of importance[b]				
Gyrodactylosis (*Gyrodactylus salaris*)				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	

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

Country: **Japan** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	+	+	+	
3. *Oncorhynchus masou* virus disease*	+	+	+	
4. Infectious pancreatic necrosis	+	+	+	
5. Viral encephalopathy and retinopathy	-	-	-	
6. Epizootic ulcerative syndrome (EUS)	-	-	-	
7. Bacterial kidney disease	+	+	+	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*	0000	0000	0000	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	-	-	-	
4. Baculoviral midgut gland necrosis	(1992)	(1992)	(1992)	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	0000	0000	0000	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	

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

Country: **Korea (DPR)** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*				
2. Infectious haematopoietic necrosis*				
3. *Oncorhynchus masou* virus disease*				
4. Infectious pancreatic necrosis				
5. Viral encephalopathy and retinopathy				
6. Epizootic ulcerative syndrome (EUS)				
7. Bacterial kidney disease				
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*				
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*				
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*				
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*				
Crustacean disease				
1. Yellowhead disease*				
2. Infectious hypodermal and haematopoietic necrosis				
3. White spot disease*				
4. Baculoviral midgut gland necrosis				
5. Gill associated virus (GAV)				
6. Spawner mortality syndrome('Midcrop mortality syndrome')				
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*				
2. Viral haemorrhagic septicaemia*				
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*				
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	

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

Country: **Korea (RO)** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	-	-	-	
3. *Oncorhynchus masou* virus disease*	?	?	?	
4. Infectious pancreatic necrosis	?	?	?	
5. Viral encephalopathy and retinopathy	?	?	?	
6. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	?	?	?	
Crustacean disease				
1. Yellowhead disease*	0000	0000	0000	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	+	+	+	
4. Baculoviral midgut gland necrosis	?	?	?	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	0000	0000	0000	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	-	-	-	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance[b]				
Gyrodactylosis (*Gyrodactylus salaris*)	0000	0000	0000	
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	

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

Country: **Lao PDR** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	***	***	***	
6. Epizootic ulcerative syndrome (EUS)	***	***	+()	1
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	***	***	***	
2. Infectious hypodermal and haematopoietic necrosis	***	***	***	
3. White spot disease*	***	***	***	
4. Baculoviral midgut gland necrosis	***	***	***	
5. Gill associated virus (GAV)	***	***	***	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	The disease occurred with indigenous scale fishes (*Morulius chrysophekadion*) in the tributary of Mekong River (Nam On). The scales of infected fish are swollen and yellowish in colour. Dorsal portion is dark red and blooded. The gills are spoiled and blooded. The death toll is 9,000 kg.

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

Country: **Malaysia** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	0000	0000	0000	
6. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	-	-	-	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	+	+	+	1
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	0000	0000	0000	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	A total of 21 samples were tested positive from the 23 samples during the reporting period. The positive samples consisted of *P. monodon* from hatcheries and grow-out ponds. The areas affected were Sabah, Pahang, Johore and Penang. Disinfection and breakcycle were used to control infections in farms. Farms around the infected areas not affected by the disease were advised to practice close system or using water treated with chlorine. Mortality rate ranges from low to high.

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

- NIL -

Country: **Myanmar** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	***	***	***	
6. Epizootic ulcerative syndrome (EUS)	***	***	+()	1
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	***	***	***	
2. Infectious hypodermal and haematopoietic necrosis	***	***	***	
3. White spot disease*	***	***	***	
4. Baculoviral midgut gland necrosis	***	***	***	
5. Gill associated virus (GAV)	***	***	***	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
	Not only reports and information were accepted during January to March 1999.

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

Country: **Nepal** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	***	***	***	
6. Epizootic ulcerative syndrome (EUS)	+	+	+	1,2,3
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	***	***	***	
2. Infectious hypodermal and haematopoietic necrosis	***	***	***	
3. White spot disease*	***	***	***	
4. Baculoviral midgut gland necrosis	***	***	***	
5. Gill associated virus (GAV)	***	***	***	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance [b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	In the month of January 1999, EUS infection was observed in the Districts of Banke, Bara and Sunsari mostly in silver carp and local fish species such as *Puntius* and *Ophiocephalus* spp.
2	In the month of February, EUS infection was observed in the Districts of Banke, Bara and Sunsari mostly in silver capr and local fish species sucha as *Puntius* and *Ophiocephalus* spp. The range of infection was between 10-20%
3	In the month of March, EUS infection was observed in the Districts of Banke, Bara, Sunsari, Siraha and Sarlahi mostly in silver carp, *Cirrhinus mrigala* and other minor local fish species *Puntius* and *Ophicephalus* and others. Infection was in the range of 15-20%.

2. New aquatic animal health regulations introduced within past six months (with effective date):
No new aquatic animal health regulation was introduced in this period.

Country: **Pakistan** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*				
2. Infectious haematopoietic necrosis*				
3. *Oncorhynchus masou* virus disease*				
4. Infectious pancreatic necrosis				
5. Viral encephalopathy and retinopathy				
6. Epizootic ulcerative syndrome (EUS)				
7. Bacterial kidney disease				
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*				
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*				
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*				
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*				
Crustacean disease				
1. Yellowhead disease*				
2. Infectious hypodermal and haematopoietic necrosis				
3. White spot disease*				
4. Baculoviral midgut gland necrosis				
5. Gill associated virus (GAV)				
6. Spawner mortality syndrome('Midcrop mortality syndrome')				
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*				
2. Viral haemorrhagic septicaemia*				
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*				
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	
2	

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

Country: **Philippines** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	0000	0000	0000	1
6. Epizootic ulcerative syndrome (EUS)	+	-	+	2
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	3
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	+	+	+	4
2. Infectious hypodermal and haematopoietic necrosis	-	-	-	5
3. White spot disease*	+	+	+	6
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	***	***	***	7
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	The disease is suspected but not yet confirmed to be present in the country. Surveillance is in place for the clinical manifestation of the disease. The capability to diagnose the disease is limited to histopathology. Reference laboratory is need for other tests to detect latent infection in fish for active surveillance of the disease.
2	Typical lesion of EUS was observed in the creek of Compostela Valley (Region XI), Mindanao in January 1999. Affected fish, *Ophicephalus striatus* (snakehead) showed dermonecrotic ulcer. H&E and Grocott's stained tissue sections showed fungal granuloma and fungal hypha. This was the first reported case of the disease in Region XI. Based on the history, the diseased fish was probably brought by the flashflood caused by the overflowing of the Agusan river that is connected to EUS affected areas. No significant mortality, only the sample sent to BFAR-Fish Health Laboratory was affected. No reported case of the disease from February to March 1999 based on surveillance of that area. An information campaign on EUS was conducted. Here are the BFAR-Fish Health Section proposed contingency plan in the region: 1) restrict introduction of fish from an EUS endemic area, 2) limit the transfer of EUS susceptible species with Region XI, 3) disinfect fishes coming from EUS endemic areas if there is extreme need to take in fishes (e.g. breeders) in the region and 4) assess spread of EUS through fish dispersal and river system. In Caraga Region (Region XIII), Mindanao, typical EUS-lesion was observed in *Scatophagus argus* (spotted sickle) and *Mugil* sp. (mullet) in March 1999. H&E and Grocott's stained tissue section showed fungal granuloma and fungal hypha. The BFAR-FHS has provided the Region and primer on EUS for information dissemination.
3	Lack of capability for the detection/diagnosis of mollusc diseases.
4	*P. monodon* samples from the farms in the province of Bulacan, Bataan, Batangas (Luzon) and Butuan (Mindanao) examined using Combined SDS Western Blot Enzyme Immunoassays at the University of Philippines, Los Banos-Biotechnology showed positive results. However, no significant mortality is observed from these farms.
5	No reported case during the period. Active surveillance is in place in *P.monodon* farms from Luzon, Visayas and Mindanao. Samples were processed for histopathological examination at BFAR-FHS.
6	*P. monodon* samples from the farms in Batangas, Bataan (Luzon), Cebu (Visayas), and Butan (Mindanao) were tested positive using Combined SDS Western Blot Immunoassays and PCR technique. Examination conducted by the UPLB-Biotechnology. There is no recognizable clinical signs/manifestation of the disease. Significant mortality occurred in some farms is associated with *Vibrio* spp. infection.
7	Samples of P.monodon from selected farms sent to Australia (Dr.Leigh Owens-James Cook University) last year (October 1998) for *in-situ* hybridisation using Spawner Mortality Virus (SMV) probe produced positive results.

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

Draft Fisheries Administrative Order (FAO) on Live Fish Importation is being finalised

Country: **Singapore** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	-	-	-	1
6. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	2
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	2
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	2
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	2
Crustacean disease				
1. Yellowhead disease*	0000	0000	0000	
2. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	
3. White spot disease*	-	-	-	
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')	0000	0000	0000	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	2
Any other diseases of importance[b]				
Unknown diseases of serious nature	nil	nil	nil	

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	Viral Encephalopathy &Retinopathy –last major outbreak reported in Nov/Dec 1997 in seabass fry.
2	No oyster farming in Singapore

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

Country: **Sri Lanka** Period: **January-March 1999**

Item	Disease status [a]			Comment numbers
	January	February	March	
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	0000	0000	0000	
2. Infectious haematopoietic necrosis*	0000	0000	0000	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	
4. Infectious pancreatic necrosis	0000	0000	0000	
5. Viral encephalopathy and retinopathy	-	-	-	
6. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	
7. Bacterial kidney disease	0000	0000	0000	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*	+	-	-	2
2. Infectious hypodermal and haematopoietic necrosis				
3. White spot disease*	+	+	+	1
4. Baculoviral midgut gland necrosis	0000	0000	0000	
5. Gill associated virus (GAV)	0000	0000	0000	
6. Spawner mortality syndrome('Midcrop mortality syndrome')				
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	0000	0000	0000	
2. Viral haemorrhagic septicaemia*	0000	0000	0000	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	There is a marked reduction in incidences of white spot symptoms.
2	Clear visual clinical signs were not reported during February and March.

2. New aquatic animal health regulations introduced within past six months (with effective date):
Aquaculture Products (Exports) regulations are being prepared.

Country: **Thailand** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	-	?	-	
6. Epizootic ulcerative syndrome (EUS)	+	-	-	1
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	***	***	***	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	***	***	***	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	***	***	***	
Crustacean disease				
1. Yellowhead disease*	?	?	?	
2. Infectious hypodermal and haematopoietic necrosis	-	-	-	
3. White spot disease*	+	+	+	2
4. Baculoviral midgut gland necrosis	***	***	***	
5. Gill associated virus (GAV)	***	***	***	
6. Spawner mortality syndrome(‘Midcrop mortality syndrome’)	***	***	***	
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	***	***	***	
Any other diseases of importance[b]				
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	There was no report of the EUS outbreak during this period. However, some giant gouramis is cage culture system in U-thai-thanee province were histologically found as EUS infected fish.
2	PCR amplification results from 2 PCR laboratories indicated that some post-larvae and young tiger prawns carried DNA of SEMBV during the reporting period.

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

Country: **Vietnam** Period: **January-March 1999**

Item	Disease status [a] January	February	March	Comment numbers
Diseases prevalent in some parts of the region				
1. Epizootic haematopoietic necrosis*	***	***	***	
2. Infectious haematopoietic necrosis*	***	***	***	
3. *Oncorhynchus masou* virus disease*	***	***	***	
4. Infectious pancreatic necrosis	***	***	***	
5. Viral encephalopathy and retinopathy	***	***	***	
6. Epizootic ulcerative syndrome (EUS)	***	***	***	
7. Bacterial kidney disease	***	***	***	
Mollusc disease				
1. Bonamiosis (*Bonamia* sp., *B. ostreae*)*	0000	0000	0000	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	
3. Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*	0000	0000	0000	
4. Perkinsosis (*Perkinsus marinus, P. olseni*)*	0000	0000	0000	
Crustacean disease				
1. Yellowhead disease*				
2. Infectious hypodermal and haematopoietic necrosis				
3. White spot disease*				
4. Baculoviral midgut gland necrosis				
5. Gill associated virus (GAV)				
6. Spawner mortality syndrome('Midcrop mortality syndrome')				
Diseases presumed exotic to the region, but reportable to the OIE				
Finfish diseases				
1. Spring viraemia of carp*	***	***	***	
2. Viral haemorrhagic septicaemia*	***	***	***	
Mollusc diseases				
1. Haplosporidiosis (*Haplosporidium costale, H. nelsoni*)*	0000	0000	0000	
Any other diseases of importance [b]				
Red spot disease in grass carp	+	+	+	
Disease of grouper cage cultured	-	-	-	
Disease of turtle	-	-	-	
MBV	+	+	+	
Unknown diseases of serious nature				

[b] In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish
Molluscs: Iridovirosis (Oyster velar disease)
Crustaceans: Nuclear polyhedrosis baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Taura syndrome; Necrotising hepathopancreatitis

* OIE notifiable diseases

[a] Please use the following symbols:

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

1. Epidemiological comments:

Comment No.	
1	
2	
3	
4	
5	
6	
7	
8	

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

Related Events

5th International Symposium on Fish Parasites: 9-13 August 1999, Ceske Budejovice, Czech Republic

Information from:
The secretariat, Institute of Parasitology
Academy of Sciences of the Czech Republic
Branisovska 31, 370 05 Ceske Budejovice, Czech Republic
Email: Moravac@paru.cas.cz or lom@paru.cas.cz

9th International Conference of the European Association of Fish Pathologists (EAFP)-"Diseases of Fish and Shellfish": 19-24th September 1999, Rhodes, Greece

Information from:
Dr Maura Hiney, EAFP Meeting Secretary
Department of Microbiology, National University of Ireland, Galway, Galway City, Ireland
Fax: +353 91 750514; Email: maura.hiney@nuigalaway.ie

Asia Regional Scoping Workshop on "Primary Aquatic Animal Health Care in Rural Aquaculture Development," Dhaka, Bangladesh, 27-30 September 1999

Information from:
NACA secretariat, Email: naca@fisheries.go.th

NACA-AAHRI Shrimp Health Management Training /Workshop, 18-23 October 1999

Information from:
NACA secretariat, Email: naca@fisheries.go.th

International conference on Risk Analysis in Aquatic Animal Health: Paris, 8-10 February 2000

Information from:
Dr. K. Sigiura
Office International des Epizootic (OIE)
Email: k.sugiura@oie.int; Web site: http://www.oic.int

Conference: Aquaculture in the Third Millenium, Bangkok, Thailand, 20-25 February 2000

Information from:
NACA secretariat, Email: naca@fisheries.go.th

CD-Rom on Diagnosis of Shrimp Diseases (by Alday de Graindorge and T.W. Flegel)
This CD-Rom provides detailed information on the diagnosis of shrimp disease, with emphasis on *Peneaus monodon.*

Information from:
NACA secretariat
Email: naca@fisheries.go.th

Epizootic Ulcerative Syndrome (EUS) Handbooks
Two new EUS handbooks are available free of charge: (1) Pathology and Histopahtology of EUS by S. Chinabut and R.J. Roberts; and (2) EUS Techical Handbook by J.H.Lilley, R.B. Callinan, S. Chinabut, S. Kanchanakhan, I.H.MacRae and M.J.Phillips.

Information from:
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List of Diseases in the
Asia-Pacific Quarterly Aquatic Animal Disease Reports

Diseases prevalent in some parts of the region

Finfish Diseases:	Epizootic heamatopoietic necrosis*
	Infectious haematopoietic necrosis*
	Oncorhynchus masou virus disease*
	Infectious pancreatic necrosis*
	Viral encephalopathy and retinopathy*
	Epizootic ulcerative syndrome (EUS)
	Bacterial kidney disease
Mollusc Diseases:	Bonamiosis (*Bonamia* sp., *B. ostreae*)*
	Marteiliosis (*Marteilia refringens, M. sydneyi*)*
	Mikrocytosis (*Mikrocytos mackini, M. roughleyi*)*
	Perkinsosis (*Perkinsus marinum, P. olseni*)*
Crustacean Diseases:	Yellowhead disease
	Infectious hypodermal and haematopoietic necrosis (IHHN)
	White spot disease
	Baculoviral midgut gland necrosis
	Gill associated virus (GAV)
	Spawner nortality syndrome ('Midcrop mortality syndrome')

Diseases presumed exotic to the region, but reportable to OIE

Finfish Diseases:	Spring viremia of carp*
	Viral Haemorrhagic septicaemia*
Mollusc Diseases:	Haplosporidiosis (*Haplosporidium costale, H.nelsoni*)*

Any other diseases of importance: In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region:

Finfish Diseases:	Channel catfish virus disease
	Infectious salmon anaemia
	Piscirickettsiosis
	Gyrodactylosis (*Gyrodactylus salaris*)
	Enteric septicaemia of catfish
Mollusc Diseases:	Iridovirus (Oyster velar disease)
Crustacean Diseases:	Nuclear polyhedrosis baculovirosis (*Bacuovirus penaei*)
	Crayfish plague (*Aphanomyces astaci*)
	Taura syndrome
	Necrotising hepathopancreatitis

* OIE notifiable disease

Instructions on how to fill in the QUARTERLY AQUATIC ANIMAL DISEASE REPORT

(Revised during the second workshop)

Symbols used in the report are similar to those used by FAO, OIE and WHO for the animal Health Yearbook. Please read this instruction carefully before you fill in the forms.

Under the heading "Month" please enter months of a quarter in question, e.g. July, August, September.

In "Comment Numbers" on page1, please enter serial number, and write your corresponding comments on page2, See Section C below.

If an unknown disease of serious nature appears, please fill in the line of the form and add epidemiological comments on page2.

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:

***	his symbol means that no information on a disease in question is available due to reasons such as lack of surveillance systems or expertise.
-	This symbols 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).
oooo	This symbol is used when disease surveillance is in place and a disease has never been re ported.
(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 occurrence of a disease in question is sporadic but it is known to be present. However the occurrence is relatively rare.
+?	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 disease, but no confirmed reported is available. **It is important that the species of animals to which it applies is indicated in the "Comments" on page2 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 symbols is used only when a disease is suspected by the reporting officer, but the presence of the disease has not been confirmed.

Refers to the Second Training Workshop of the FAO/NACA/OIE Regional Programme for the Development of technical Guidelines on Quarantine and Health Certification and Establishment of Information Systems for the Responsible Movement of live Aquatic Animals in Asia, 1-5 February 1999, Bangkok, Thailand.

C. Subjects to be covered in the Epidemiological Comments

1. Origin of 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 disease (describe details as much as possible);
9. Samples sent to national or international laboratories for confirmation (indicate the names of labo ratories); and
10. Published paper (articles in journals)/web site, etc.

Important

Please send the **original report** of 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 one and a half month (45 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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FAO Fishery Resources Division, Fisheries Department
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Notes

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Website: **http://www.enaca.org**