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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

January – March 2011

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Foreword

Animal Welfare (for Farmed Fish)…is Asia-Pacific Ready?

Is handling/killing of farmed aquatic animals inhumane? This will be the question that every farmers/processors need to ask whenever they harvest/process their produce or during eradication of stocks when there is a disease outbreak. According to the World Organisation for Animal Health (OIE), animal welfare in general is a complex subject with scientific, ethical, economic, cultural and political dimensions. It is currently considered as one of the standards of quality of animal products. And with the growing consumer interest on animal welfare worldwide, it is just appropriate to spend some insights on this aspect with regard to aquacultured aquatic animals, especially in the Asia-Pacific region.

In the past, animal welfare acts focus on the protection of aquatic animals used for research or teaching, for exhibition, and for commercial transport. Additionally, controlled use of chemicals during aquaculture operations and disease prevention and treatment are dealt with in fish welfare. In aquaculture research for example, overwhelming emphasis is given on keeping fish in the best possible low stress conditions to promote rapid growth and natural reproduction (Allan and Heasman, 2001). Fish farmers, on the other hand, must have access to a range of properly authorized medicines to safeguard animal health and welfare (Costello et al., 2001).

At present, the *Aquatic Animal Health Code* (Aquatic Code; OIE, 2010a) includes one Section that deals with Welfare of Farmed Fish (Section 7) containing three chapters (Chapter 7.1 – Introduction to recommendations for the welfare of farmed fish; Chapter 7.2 – Welfare of farmed fish during transport; and Chapter 7.3 – Stunning and killing of farmed fish for human consumption). Chapter 7.3 is the most recent addition, which was unanimously adopted by the 176 OIE Members during the OIE 78th General Assembly Meeting in 2010. In preparation is the chapter on emergency killing for disease control purposes not intended for human consumption (Chapter 7.4). Overall, the Section lists recommendations (on a general level) for the welfare of farmed fish (excluding ornamental species) during transport, slaughter, and destruction for disease control purposes. The following principles will apply:

- The use of fish carries with it an ethical responsibility to ensure the welfare of such animals to the greatest extent practicable;
- The scientific assessment of fish welfare involves both scientifically derived data and value-based assumptions that need to be considered together, and the process of making these assessments should be made explicit as possible.

Looking at the existing animal welfare regulations involving (farmed) fish (Table 1), none came from Asia-Pacific countries, which are the main producers of aquaculture products in the world. This scenario can be due to the fact that majority of aquafarmers in the region are small scale, especially in rural/coastal communities. And with the long history of aquaculture in Asia, the aquaculture traditions handed down from one generation to the next and modified by modern technologies, it will surely be a great challenge to implement any fish welfare act that might directly or indirectly affect the overall perceptions of small scale aquafarmers. China, as example, is the top aquaculture producer, has the longest history of aquaculture practices, and

Table 1. National and International Welfare Acts in Relation to Fish (http://www.nal.usda.gov/awic/pubs/Fishwelfare/reg.htm).

Country or Union	Name of Act(s)
Austria	*Bundesgesetz vom 27 September 1989 über Versuche an lebenden Tieren (Tierversuchgesetz* 1988)
Belgium	*Arrêté Royal du 14 novembre 1993 relatif à la protection des animaux d'expérience*
European Union	EU-Directive (86/609/EEC)
France	*Décret 87-848 du 19 octobre 1987 pris pour l'application de l'article 454 du code pénal et du troisième alinéa de l'article 276 du code rural et relatif aux expériences pratiquées sur les animaux.*
Finland	*Eläinsuojelulaki* 247/1996 (Law On Animal Protection); *Eläinsuojeluasetus* 396/1996 (Act On Animal Protection); *Asetus koe-eläintoiminnasta* 1076/1985. (Act on Animal Experimentation, changed partially by Act 395/1996); *Maa- ja metsätalousministeriön päätös tieteellisten eläinkokeiden luokituksesta* 447/1986 (Decree of Veterinary Division in Ministry of Forestry and Agriculture on classification of animal experiments); *Asetus kokeellisiin ja muihin tieteellisiin tarkoituksiin käytettävien selkärankaisten eläinten suojelemiseksi tehdyn eurooppalaisen yleissopimuksen voimaansaattamisesta* 1360/1990 (Introductory Act on European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes)
Greece	*Décret présidentiel du 12-04-1991, FEK A numéro 64 du 03-05-1991 Page 1061*
Germany	*Erste Gesetz zur Ænderung des Tierschutzgesetzes vom 12-08-1986* *Bundesgesetzblatt Teil I vom 22-08-1986 Seite 1309.*
Ireland	The Cruelty to Animals Act of 15-08-1876. EC (Amendment of the Cruelty to Animals Acts of 1976) Regulations of 1994, Statutory Instruments Number 17 of 1994.
Italy	*DM 27/01/1992 - Attuazione della Direttiva n. 86/609/CEE in materia di protezione degli animali utilizzati a fini sperimentali o ad altri fini scientifici* *Circolare 05/05/1993 - Decreto Legislativo 27 gennaio 1992, n. 116, articoli 8 e 9, concernenti deroghe agli articoli 3 e 4.* *Circolare 22/04/1994 n. 8 - Applicazione del Decreto Legislativo 27 gennaio 1992, n. 116, in materia di protezione degli animali utilizzati a fini sperimentali o ad altri fini scientifici.*
Norway	The 1974 Animal Welfare Act (in addition supplemented by EU Directive 86/609/CEE)
Portugal	*Decreto-lei numero 129/92 de 15-06-1992, Diario da Republica I Série A, numero 153 de 06-07-1992 Pagina 3197.*
Spain	*Real Decreto numero 223/88 de 14-103-1988 relativo a la protection de los animales utilizados para experimentacion y otros fines científicos, Boletín Oficial del Estado numero 67 de 18-03-1988 Pagina 8509.*
United Kingdom	The Animals (Scientific Procedures) Act 1986 (subsequently amended by three Statutory Instruments)
Sweden	*Djurskyddslag'*, no. 1988/534, amended 25 February 1998 (no. 1998/56)
USA	The Animal Welfare Act of 1966 (subsequently amended in 1970, 1976, 1985, 1990, and 2002)

one of the largest consumer of seafoods, does not have any existing fish welfare regulation. Same goes with most of the Asian countries where transport, handling and killing of fish usually do not conform with the fish welfare guidelines drafted by OIE. The thought that fish are raised (cultured) solely for human consumption, humane or inhumane handling and killing of fish stocks will be the least of the concerns by most aquafarmers in the region, especially so with small producers that culture fish mostly for domestic consumption or for local market.

Thus, the challenge will remain in the implementation of fish welfare regulations as the perception of what does or does not constitute an act of cruelty to animals differs from one region and culture to another (OIE, 2010b). Fish welfare acts should also consider the extent to which the regulations should be applied, whether it will be limited to big producers and processors that produce fish for export, or will include even the small producers that only target local markets. If it will include the latter, the culture/traditions-rich Asia-Pacific countries will

surely find it hard to abide on whatever fish welfare acts that will be promulgated, especially if it is more inclined or intended for fulfilling international certification system for exported aquaculture products. As such, small (scale) producers and local consumers in the region might not partake at all on these fish welfare acts, as their main concern is just to produce and consume fish.

Cited References:

Allan, G and Heasman, H, 2001. The ethics of research with fish: who is watching the scientists and why? Fish NSW, 4:40-41.

Costello, MJ, Grant A, Davies, IM, Cecchini, S, Papoutsoglou, S, Quigley, D., Sarogila, M, 2001. The control of chemicals used in aquaculture in Europe. J. Appl. Ichthyol. 17: 173-180.

OIE, 2010a. Aquatic Animal Health Code 2010. 13th Edition. World Organisation for Animal Health, Paris, France.

OIE, 2010b. Animal Welfare Fact Sheet. World Organisation for Animal Health, Paris, France.

Reports Received by the NACA Secretariat

Country: AUSTRALIA Period: January - March 2011

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	-(2009)	-(2009)	-(2009)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	+	+	-(2011)	II	2
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8.Grouper iridoviral disease	0000	0000	0000		
9.Viral encephalopathy and retinopathy	-(2010)	+	-(2011)	II	3
10.Enteric septicaemia of catfish	-(2010)	-(2010)	-(2010)	III	4
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	+	+	-(2011)	II	5
3. Abalone viral mortality	+	+?	-(2011)	III	6
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6.Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	-(2008)	-(2008)	-(2008)		7
5. Infectious myonecrosis	0000	0000	0000		
6.White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		8
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		9
2. Infection with *Batrachochytrium dendrobatidis*	+	-(2011)	-(2011)	III	10
ANY OTHER DISEASES OF IMPORTANCE					
1. Ostreid herpesvirus (OsHV-1 µvar)	+	-(2011)	-(2011)	III	11
2.					

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Epizootic haematopoietic necrosis was not reported this period despite passive surveillance, but is known to have occurred previously in New South Wales (last year reported 2009), Victoria (last year reported 2004) and South Australia (last year reported 1992). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in the Northern Territory, Queensland or Western Australia. No information available this period, but known to occur in the Australian Capital Territory (last year reported 2008).
2	**Epizootic ulcerative syndrome** 1. **Reported in Queensland** in January and February 2011. Passive surveillance; 2. **In** Estuarine fish mullet (Mugilidae), whiting (*Sillago* sp.) and bream (Sparidae); 3. **Clinical signs-** skin ulcerations; deep granulomatous dermatitis and myositis associated with fungal hyphae; 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** unknown but considered minimal; 6. **Economic loss-** n/a; 7. **Geographic extent-** Burnett River, Moreton Bay, South Maroochy River, Edward River; 8. **Containment measures-** not applicable; 9. **Laboratory confirmation-** diagnosed histopathology; 10. **Publications-** unpublished.

3	**Viral Encephalopathy and Retinopathy** 1. **Reported in Queensland** in February 2011. Passive surveillance; 2. **In** Barramuni fry (*Lates calcarifer*); 3. **Clinical signs-** increase mortalities; lack of vigour; vacuolated, necrotic neuronal cells in brain and retina; 4. **Pathogen-** betanodavirus; 5. **Mortality rate-** 10%; 6. **Economic loss-** n/a; 7. **Geographic extent-** six tanks in one hatchery; 8. **Containment measures-** not applicable; 9. **Laboratory confirmation-** diagnosed by histopathology; 10. **Publications-** unpublished.
4	Enteric septicaemia of catfish was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last reported 1st quarter 2010), Queensland (last year reported 2008) and in Tasmania in zebrafish (*Brachydanio rerio*) in PC2 containment (last year reported 2001). Never reported in New South Wales, South Australia, Victoria and Western Australia despite passive surveillance. No information available this period in the Australian Capital Territory.
5	**Infection with *Perkinsus olseni*** 1. **Reported in South Australua** in January and February 2011. Active surveillance; 2. **Species affected:** adult abalone *Haliotis rubra*; 3. **Clinical signs-** lesions typical of *Perkinsus olseni* infection;; 4. **Pathogen-** *Perkinsus olseni*; 5. **Mortality rate-** wild stocks; less than 100 animals on each occasion; 6. **Economic loss-** negligible; 7. **Geographic extent-** one square kilometer; 8. **Containment measures-** commercial fishers land abalone in-shell in Perkinsus positive areas rather than shucking at sea, other measures are bein gconsidered; 9. **Laboratory confirmation-** diagnosed histopathology; 10. **Publications-** unpublished.
6	**Infection with abalone herpes-like virus (Abalone viral ganglioneuritis)** 1. **Reported in Tasmania** in January 2011. Passive surveillance; 2. **In** blacklip abalone (*Haliotis rubra*); greenlip abalone (*Haliotis laevigata*) 3. **Clinical signs-** clinical disease expressed strongly in *H.laevigata* including protruding radula; 4. **Pathogen-** abalone herpes-like virus; 5. **Mortality rate-** unconfirmed; 6. **Economic loss-** n/a; 7. **Geographic extent-** two commercial live holding facilties (*H. rubra*) and one farm (*H. laevigata*) had clinical disease; infection without disease signs was detected using PCR in a further three processors in wild abalone in one location. All detections were in Eastern Tasmania; 8. **Containment measures-** quarantine with full containment, destocking and decontamination; 9. **Laboratory confirmation-** diagnosed by i. PCR; ii. histopathology; iii. gross signs; 10. **Publications-** unpublished. Abalone viral ganglioneuritis is known to have occurred previously in Victoria (last reported 1st quarter 2010). Passive surveillance and never reported in Queensland, New South Wales, South Australia and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility) and Northern Territory.

7	Infectious hypodermal and haematopoietic necrosis virus was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008) and Northern Territory (last year reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available in Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present).
8	White tail disease was not reported this period from Queensland despite passive surveillance (last year reported 2008). Passive surveillance and never reported from New South Wales and South Australia. No information available this period in the Australian Capital Territory, Northern Territory, Tasmania, Victoria and Western Australia.
9	Infection with ranavirus was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (reported to have occurred in 2008). Suspected but not confirmed despite passive surveillance in Queensland. Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory, New South Wales, South Australia, Victoria and Western Australia.
10	**Infection with *Batrachochytrium dendrobatidis*** 1. **Reported in Victoria** in January 2011. Passive surveillance; 2. **In** eastern banjo frog (*Limnodynastes dumerill*) 3. **Clinical signs-** n/a; 4. **Pathogen-** *Batrachochytrium dendrobatidis*; 5. **Mortality rate-** 22 frogs found dead over a period of two months, in a wild population; 6. **Economic loss-** n/a; 7. **Geographic extent-** one property; 8. **Containment measures-** n/a; 9. **Laboratory confirmation-** diagnosed using PCR; 10. **Publications-** unpublished.
11	**Infection with Ostreid herpesvirus (OsHV-1 microvariant)** 1. **Reported in New South Wales** in January 2011. Passive surveillance; 2. **In** Pacific oysters (*Crassostrea gigas*) 3. **Clinical signs-** acute ulcerative changes; 4. **Pathogen-** Ostreid herpesvirus 1 microviariant; 5. **Mortality rate-** up to 90% mortality of wild and cultivated Pacific oysters in open water environment over approximately 10-15 km; 6. **Economic loss-** n/a; 7. **Geographic extent-** Goerges River (Botany Bay) and Parramatta River; 8. **Containment measures-** movement restrictions on shellfish and associated equipment; 9. **Laboratory confirmation-** diagnosed using PCR, sequencing confirmed microvariant; 10. **Publications-** OIE immediate notification (7 January).

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

Country: HONG KONG SAR Period: January - March 2011

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Koi herpes virus was detected from a group of koi carps that had been submitted for health certification.
2	
3	

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

Country: INDIA **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Reported from very limited area of Lakhimpur Kheri District in Uttar Pradesh.
2	Reported from very limited area of Guntur District in Andhra Pradesh and parts of Nagapattinam District in Tamil Nadu.
3	

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

Country: INDONESIA **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	**KHV** 1. Occurred mostly at stagnant water ponds such as in Bengkulu (Arga Makmur), Riau (Kampar), West Java (Sukabumi, Cuanjur, Garut) 2. Species affected: Common carp (*Cyprinus carpio*) 3. Clinical sign: 4. Pathogen: Koi herpes virus 5. Mortality rate: 6. Economic loss: 7. Names of infected areas: Riau (Kampar), Bengkulu, Banten (Pandeglang), West Java (Sukabumi, Cuanjur, Garut) 8. Preventive/control measures: eradication of infected fish; quarantine procedures for non-infected fish (transferred to another pond) 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published
2	**GIV** 1. - 2. Species affected: Polkadot grouper (*Cromileptes altivelis*),Tiger grouper (*Ephinephelus fuscoguttatus*); 3. Clinical sign : abnormally swim at surface, no response, irritation at part of body, presence of giant cell at kidney, no clinical sign on some samples; 4. Pathogen : Grouper iridovirus; 5. Mortality rate: low (1%) 6. Economic loss: not significant 7. Names of infected areas: Lampung (Hurun Bay and Tanjung Putus); 8. Preventive/control measures: - 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published

3	**VER/VNN** 1. Diseases were found in seed phase 2. Species affected: Tiger grouper (*Ephinephenelus fuscoguttatus*), Polkadot grouper (*Cromileptes altivelis*) 3. Clinical sign: surface swimming (spiral, whirling or belly – up rest), bad response; 4. Pathogen: Viral nervous necrosis virus 5. Mortality rate: 6. Economic loss: low to high 7. Names of infected areas: Lampung; 8. Preventive/control measures: - 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published
4	**TSV** 1. - 2. Species affected : White shrimp (*Litopeneaus vanamei*) 3. Clinical signs: mass mortality among moulting shrimp 4. Pathogen : Taura Syndrome Virus 5. Economic loss : - 6. Mortality rate: - 7. Name of infected area: Lampung, Banten (Serang); 8. Preventive/control measures: Early harvest 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published
5	**WSSV** 1. - 2. Species affected: Tiger shrimp (*Penaeus monodon*), White shrimp (*Litopeneaus vanamei*) 3. Clinical sign: White spot on carapace, shrimp becoming weak and swimming on the surface and near pond dikes 4. Pathogen: White Spot Syndrome Virus (Whispovirus) 5. Mortality rate : high (100%) 6. Economis loss : - 7. Infected area: Lampung, Banten (Serang), Central Java (Jepara, Semarang, Kendal, Pati), East Java (Gresik, Bangkalan, banyuwangi), West Nusa Tenggara (Sumbawa Besar); 8. Preventive/Control measures: Early harvest, application of probiotics; 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published
6	**IHHNV** 1. - 2. Species affected: White shrimp (*Litopenaeus vannamei*) 3. Clinical sign: slow growth (very small size/dwarf); 4. Pathogen: Infectious Hypodermal and Haematophatic Necrosis Virus (Perpovirus) 5. Mortality rate: low 6. Economic loss : - 7. Name of infected area: Lampung; 8. Preventive/Control measures: 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published

7	**IMNV** 1. - 2. Species affected: White shrimp (*Litopeneaus vanamei*) 3. Clinical sign: broken shrimp meat with white sign, especially at abdomen and telson, positive detection by PCR 4. Pathogen: Infectious Myonecrosis Virus 5. Mortality rate: high (+ 70%) 6. Economic loss: 7. Prevetive/Control measures taken: Early harvest if possible 8. Infected area: Lampung 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published

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

Country: KOREA, REPUBLIC OF Period: January - March 2011

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Viral haemorrhagic septicaemia (VHS) was detected from juvenile flounder (*Paralichthys olivaceaus*) from a hatchery in Jeju. No clinical signs and mortality were shown. The confirmative diagnosis was performed by Aqua-life Disease Control Division, National Fisheries Research Development Institute. The VHS-detected fish were slaughtered for control.
2	Red seabream iridovirus (RSIV) was detected from juvenile cod (Gadus macrocephalus) from a hatchery in Busan. No clinical signs and mortality were hown. The confirmative diagnosis was performed by Aqua-life Disease Control Division, National Fisheries Research Development Institute. The RSIV-detected fish were slaughtered for control.
3	

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

Country: MALAYSIA **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	**GIV** Diagnostic cases: 1. PCR testing for GIV was done using IQ2000 kit (in NaFisH) among the following fish: • Grouper • Snapper • Seabass 2. All samples were negative for GIV. The fish samples were from Kedah and Penang
2	**TSV** 1. TSV was not detected in all sea-catch frozen samples sent to Industrial Resources Laboratory (LIR) for routine and monitoring purposes. 2. No positive cases detected (PCR), although active surveillance was conducted by DOF in East Malaysia.

3	**WSSV** Egg-PL 1. Only 1 out of 97 samples from Sabah in February was tested positive for WSSV by Industrial Resources Laboratory (LIR) for routine and monitoring purposes. 2. No positive cases detected (PCR), although active surveillance was conducted by DOF in Sabah, East Malaysia. Juvenile-adults 1. 18 of 82 samples in January to March were tested positive to WSSV in the states of Negeri Sembilan, Johor, Selangor and Kedah by LIR laboratory for routine and monitoring purposes. 2. No positive cases detected (PCR), although active surveillance was conducted by DOF in East Malaysia..
4	**YHV** 1. All sea-catch frozen shrimp samples tested by Industrial Resources Laboratory (LIR) were negative for YHV. 2. No positive cases detected (PCR), although active surveillance was conducted by DOF in East Malaysia.
5	**IHHNV** Egg-PL 1. No positive cases detected (PCR), although active surveillance was conducted by DOF in Sabah, East Malaysia Juvenile-adults 1. Only 1 out of 28 samples from Perak in February was tested positive for IHHNV by Industrial Resources Laboratory (LIR) for routine and monitoring purposes.. 2. No positive cases detected (PCR), although active surveillance was conducted by DOF in East Malaysia.
6	**IMNV** 1. All sea-catch frozen shrimp samples tested by Industrial Resources Laboratory (LIR) were negative for MrNV.
7	**MrNV** Juvenile-adults 1. Only 1 out of 6 samples from Sarawak in February was tested positive for MrNV by Industrial Resources Laboratory for routine and monitoring purposes.
8	**NHP** 1. All sea-catch frozen shrimp samples tested by Industrial Resources Laboratory (LIR) were negative for NHP.

9	**Streptococcal infection in Tilapia Merah (*Oreochromis* sp.)** Diagnostic cases in Felda Titi, Jelebu, Negeri Sembilan: 1. **Clinical Signs** – swollen eye, lethargy, erratic swimming, poor feeding; 2. **Pathogen** – *Streptococcus agalactiae*; 3. **Other Pathogens** – *Trichodina* sp.; 4. **Mortality rate** – 25% 5. **Economic loss** – RM9,687.50; 6. **Source of fry** – Pertang Farm, Simpang Pertang, Negeri Sembilan; 7. **Laboratory confirmation** – API 20E STREP; 8. **Publication** – Laboratory reports made available to farms.
10	**Hepatopancreatic parvo virus disease (HPV)** Egg-PL 1. Only 1 out of 16 samples from Johor in March was tested positive for HPV by Industrial Resources Laboratory (LIR) for routine and monitoring purposes.
11	**Cyprinid herpesvirus 2 (CyHV-2, GFNHV)** 1. Samples of *Carrasius auratus* from Ulu Tiram, Johor were tested positive for GFHNV.

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

Country: MYANMAR **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	During this period, we have received 6 samples of shrimps (2 frozen, 2 broodstock and 2 adult) intended for export, and all were tested negative for TSV, WSSV and IHHNV.

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

Country: NEPAL **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	
2	
3	

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

Country: PHILIPPINES **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Three (3) samples of adult red grouper (*Epinephelus spp.*) collected from Looc (Lubang Island), Occidental Mindoro were analyzed using PCR test. All samples showed a negative result for Viral Encephalopathy and Retinopathy. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
2	There were forty-three (43) samples (40 *Penaeus vannamei* and 3 *Penaeus monodon*) of different stages (fry, post-larvae, broodstock, juvenile and adult) that were analyzed using the PCR test, and all samples showed a negative result for Taura Syndrome Virus. The samples were collected from General Santos City, Zambales, Iloilo City, Cebu, Sarangani Province, Misamis Occidental, Antipolo City, Tacloban City and Bohol. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
3	Seventy-three (73) samples (21 *P. monodon*; 49 *P. vannamei*; 1 *Panulirus ornatus* and 2 *Scylla serrata*) of different stages (fry, juvenile, broodstock and adult) were analyzed using PCR test. A sample of an adult *P. vannamei* from Talibon, Bohol showed a positive result for White Spot Virus; while all the remaining 72 samples showed a negative result. The samples were collected from Lanao del Norte, Iloilo City, Batangas, Cebu, Zamboanga City, Davao del Sur, Catanduanes,Tacloban City, Davao Oriental, Sarangani Province, Misamis Occidental, Zambales, Antipolo City, Aklan and Bohol. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
4	Fifty-one (51) samples (40 *P. vannamei* and 11 *P. monodon*) of different stages (fry, juvenile, broodstock and adult) were analyzed using the PCR and all showed a negative result for Yellowhead Virus. The samples were collected from General Santos City, Zambales, Iloilo City, Cebu, Lanao del Norte, Batangas, Catanduanes, Sarangani Province, Misamis Occidental, Antipolo City, Tacloban City and Bohol. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.

5	A total of thirty-eight (38) samples (30 *P. vannamei* and 8 *P. monodon*) of different stages (fry, post-larvae, juvenile, broodstock and adult) were analyzed using PCR test. Out of the 38 samples, seven (7) samples - 6 *P. monodon* (4 from Lanao del Norte, 2 from Tacloban) and 1 *P. vannamei* from Zambales showed a positive result for Infectious Hypodermal and Haematopoietic Necrosis. The samples were collected from Zambales, General Santos City, Iloilo city, Lanao del Norte, Batangas, Cebu, Davao del Sur, Catanduanes, Tacloban City, Davao Oriental, Sarangani Province, Misamis Occidental, Antipolo City and Bohol. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
6	Forty-three (43) samples (40 *P. vannamei* and 3 *P. monodon*) of different stages (fry, post-larvae, juvenile, broodstock and adult) were analyzed and all showed a negative result for Infectious Myonecrosis through PCR test. The samples were collected from General Santos City, Zambales, Iloilo City, Cebu, Sarangani Province, Misamis Occidental, Antipolo City, Tacloban City and Bohol. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
7	Fifty-five (55) samples (44 *P. vannamei* and 11 *P. monodon*) of different stages (fry, post-larvae, juvenile, broodstock and adult) were analyzed using PCR test and all samples showed a negative result for Necrotising Hepatopancreatitis. The samples were collected from General Santos City, Zambales, Iloilo City, Lanao del Norte, Cebu, Davao del Sur, Davao Oriental, Sarangani Province, Misamis Occidental, Antipolo City, Tacloban City, and Bohol. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.

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

Country: SINGAPORE **Period: January - March 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	(2010)	(2010)	(2010)		
7. Koi herpesvirus disease	(2010)	(2010)	(2010)		
Non OIE-listed diseases					
8.Grouper iridoviral disease	(2010)	(2010)	(2010)		
9.Viral encephalopathy and retinopathy	+	(2011)	+	I,II,III	1,2
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Abalone viral mortality	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6.Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	(2010)	+?	+	III	3
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	VNNV was detected via PCR in a batch of diseases black grouper fingerlings submitted from a floating netcage farm for disease diagnosis. The farm reported 30-40% and with increasing mortality. Histopathology revealed prominent vacuolations in the nuclear layers of the retina and mild vacuolations in the brain. The batch was imported from Teregganu, Malaysia. The farmer was advised to purchase from alternate source farm or to disinfect the fertilized eggs if eggs are brought in.
2	VNNV was detected via PCR in a batch of hybrid grouper fry (21 days old) submitted from a land based farm for disease diagnosis. The farm reported 5% mortality and 95% morbidity. The fish presented were moribund or exhibited abnormal spiral swimming behavior. Histopathology revealed prominent vacuolations in the nuclear layers of the retina and the brain. The batch was also imported from Terengganu, Malaysia. The farmer voluntarily culled the entire batch of fry.
3	WSSV was detected via PCR in a batch of apparently healthy marine shrimps submitted from a land based (Ornamental) farm for routine surveillance in February 2011. In the follow-up investigation in early March, WSSV was also detected in a batch of *Macrobrachium rosenbergii* and freshwater yabby (*Cherax* sp.). Three other batches of crustaceans, including freshwater yabby, Sakura shrimp and marine food shrimp, sampled from the same premise tested negative. The farmer voluntarily culled all the affected batches of crustaceans, disinfected and fallowed the ranks and ponds holding the affected animals.

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

Country: THAILAND **Period: January - March 2011**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	(2009)	(2009)	(2009)	II	1
6. Red seabream iridoviral disease	0000	0000	0000	III	
7. Koi herpesvirus disease	-	-	-	III	2
Non OIE-listed diseases					
8.Grouper iridoviral disease	-	-	-	III	
9.Viral encephalopathy and retinopathy	-	-	-	III	
10.Enteric septicaemia of catfish	0000	0000	0000	II	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Perkinsus olseni*	0000	0000	0000	II	
3. Abalone viral mortality	0000	0000	0000	II	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
5. Acute viral necrosis (in scallops)	***	***	***		
6.Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	+( )	III	3
2. White spot disease	-	+( )	+( )	III	4
3. Yellowhead disease	+( )	-	-	III	5
4. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	6
5. Infectious myonecrosis	0000	0000	0000	III	
6.White tail disease (MrNV)	+ ( )	-	-		7
7. Necrotising hepatopancreatitis					
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	II	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(2007)	(2007)	(2007)	III	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Under active and passive surveillance programs in aquaculture establishment farms or premises and in the wild fish population, there was no EUS occurrence since February 2009.
2	Last occurrence of KHV reported in January 2010. 11 koi shipments were imported from Japan. However one koi carp shipment (6,510 kois) exhibited KHV disease. 30% of the imported kois exhibited classic clinical signs. The KHV confirmation obtained from Inland Aquatic Animal Health Research Institute (AAHRI, DOF). All imported kois in a quarantine house were destroyed in December 2010. The quarantine house was dis-infected and cleaned. The KHV case found in the import quarantine house will not be recorded in the national disease situation.
3	A total of 315 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 5 specimens or 1.6% recorded as PCR positive or carrying TSV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
4	A total of 315 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 5 specimens or 1.6% recorded as PCR positive or carrying WSSV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
5	A total of 316 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 2 specimens or 0.63% recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.

6	A total of 267 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 24 specimens or 9.0 % recorded as PCR positive or carrying IHHNV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
7	Giant freshwater prawn post larvae specimens from hatcheries were submitted for *Mr*NV testing under a passive surveillance program. 2 specimens out of 3 specimens showed PCR positive for *Mr*NV. The prawn larvae of 2 positive specimens showed chronic clinical signs. The disease prawns and theirs population were destroyed. Concepts in bio-security for disease prevention had been advised to farm operators.

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

Country: VIETNAM **Period: January - March 2011**

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

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

a/ Please use the following symbols:

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

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

1. Epidemiological comments:

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

Comment No.	
1	Pathogen: *Edwardsiella ictaluri* Infection found in native catfish (Pangasius hypophthalmus) farms; Mortality rate: high (50-80%) Clinical Signs: loss of appetite, swollen abdomen, bulging and opaque eyes (blind), petechia and haemorrhages around the mouth, abdominal region and fin bases. Internally, haemorrhages and white necrotic foci in the liver, kidney and other organs, enteritis, systemic oedema, accumulation of yellow or bassitic fluid in the body cavity, enlargement of spleen, swollen baldder. Control measures: water change, antibiotic treatment (e.g. Florfenicol, Enrofloxacin) thru feeds; water treatment with chlorine and BKC.
2	Suspected by researchers but presence not confirmed. Only one sample was reported to bepositive with Perkinsus, but the Department of Animal Health was not informed previously where/when the sample was sent for analysis.

3	Pathogen: White spot syndrome virus (WSSV) Disease was found in black tiger shrimp (Penaeus monodon) and white leg shrimp (Litopennaeus vannamei); The disease occurred in six provinces including Nghe An, Quang Ngai, Binh Dinh, Ninh Thuan, Kien Giang and Ca Mau; Mortality rate: medium to high, 100% in some cases within 10 days; Clinical Signs: Lethargic or moribund shrimp accumulated at pond surface anda edges, slow to erratic swimming behavior. Overall body color often reddish. Minute to large (0.5-2.0 mm diameter) white inclusions embedded in the cuticle, especially in the removed carapace held against the light after scrapping off attached tissues (not always seen). Control Measures: Early harvest, strict isolation of outbreak ponds with movement controls and control of transportation. Disinfection of outbreak ponds using Calcium hypochlorite (Chlorine).

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

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

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

Recent Aquatic Animal Health Related Publications

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Please use the following symbols to fill in the forms.

A. Symbols used for negative occurrence are as follows:

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

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

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

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

B. Symbols used for positive occurrence are shown below.

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

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

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

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

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

C. Levels of Diagnosis

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

D. Subjects to be covered in the Epidemiological Comments

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

IMPORTANT

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

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

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ANNOUNCEMENT

Eighth Symposium on Diseases in Asian Aquaculture (DAA VIII)
21-25 November 2011, Mangalore, India

The Fish Health Section (FHS) of the Asian Fisheries Society proudly announces the "Eighth Symposium on Diseases in Asian Aquaculture - DAA VIII" with the theme ***"Fish Health for Food Security"*** to be held on 21-25 November, 2011 in Mangalore, India. The 9th Triennial General Meeting (TGM-9) of the FHS will also be held in conjunction with DAA VIII. The symposium is being co-hosted by the College of Fisheries, Karnataka Veterinary, Animal and Fisheries Sciences University, Mangalore.

The theme of this symposium has been aptly chosen to address food security concerns through increased fish production to meet the increasing global demand. The dynamic nature of the aquatic environment presents several challenges in aquaculture diseases and their management. To address these challenges the interdisciplinary approaches have become inevitable. The need of the hour is to bring together the conventional practices with molecular approaches to find answers to burning issues and developing strategies to implement science based tools at the field and national levels to ensure sustainability of aquaculture. DAA VIII will provide a forum wherein this theme will be deliberated upon in various sessions.

Intensive aquaculture to meet increasing food demand together with diversity of the species cultured, varying culture methods employed and impact of climate changes has resulted in breakdown of the delicate balance between the host, the pathogen and the environment. This has caused disease problems due to newly emerging and reemerging pathogens resulting in colossal losses to the industry and consequent livelihood issues. Local disease problems have become global in certain instances due to the transportation of live aquatic animal across boundaries.

It is an established fact that aquaculture is expanding rapidly with Asia contributing substantially to the global food security and in turn serving as a major economic activity in several developing countries. Sustainable production calls for adoption of scientific aquaculture practices keeping in mind the environmental impact due to inappropriate management. The indiscriminate use of antibiotics and other chemicals has resulted in problems of antibiotic resistance among bacteria, accumulation of chemicals including antibiotic residues, causing ban on aquaculture products by importing countries. There is an urgent need to look at alternatives to antibiotics and other chemicals by developing ecofriendly technologies. The advent of geographical information systems in providing data on climate changes, water quality and consequent disease prediction will enable to take suitable action plan by the aquaculturists. Risk assessment therefore is of paramount importance. Thus, an inter-disciplinary approach is required by scientists and all concerned working in the aquaculture sector to develop appropriate strategies for the sustainable production of aquatic animal food by disease management. To achieve this several levels such as capacity building in diagnostics, increasing the awareness among farmers on good husbandry practices through ecofriendly management measures such as vaccination, probiotics, immunostimulants, bioremediators etc. needs to be constantly developed and implemented.

In a series of scientific sessions across four days, internationally recognised keynote speakers and paper presenters will deliberate on the following tentative issues:

- Global aquaculture – Past, present and future
- Public health and trade impacts
- Environmental approaches to disease management
- Epidemiology of finfish diseases
- Epidemiology of crustacean shellfish diseases

- Epidemiology of molluscan shellfish diseases
- Emerging issues and approaches in aquatic animal health management
- Biosecurity and aquaculture
- Diagnostic development – conventional to molecular
- Immunological approaches to disease management
- Genomics, proteomics and bioinformatics
- Pathogen risk analysis and risk assessment
- Alternatives to antimicrobials

In the spirit of the theme "Fish health for food security", this conference aims to provide a platform for international biologists, pathologists, fisheries scientists, veterinarians, breeders and policy makers to interact and exchange the latest ideas and techniques in the business of aquaculture, especially with respect to Asia. In addition, there will be sessions that focus on how rapid developments in the fields of genomics and bioinformatics are changing our interpretation of aquatic diseases. These sessions are expected provide a better appreciation of pathogenomics and its impact on the aquatic organisms, and will cover both the fundamental and practical aspects of this multidisciplinary subject area.

Participants will also be offered a wide choice of technical and cultural tours. Mangalore is a coastal city in the state of Karnataka, well known for world famous Belur and Halebeedu temples, Sixty feet monolithic statue of Gomateshwara at Shravanabelgola, Mysore palace and Bangalore, the silicon valley of India. All these places are within 250-300 km from Mangalore.

Registration and Abstract submission are now open. Please visit www.daa8.org for further details.

Pending registration and submission of abstracts, all overseas participants desirous of attending the symposium are requested to furnish the following details:

Name	:
Date of Birth	:
Nationality	:
Passport number	:
Passport Issue date	:
Passport Expiry date	:
Permanent address	:
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Email ID	:

This may be sent by email to daa8mngindia@gmail.com. The information is required urgently by the organizers for obtaining the necessary clearance from Government of India, to facilitate obtaining VISA from the Indian Consulate/Embassy of your country.

DAA-VIII is your gateway to **'Incredible India'** –Don't miss the opportunity-

HURRY UP & REGISTER !!!

Notes

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