Summary: Although the OIE’s scope has covered aquatic animals for over forty years, national Delegates of many Member Countries do not seem to fully acknowledge their resulting responsibilities regarding, for example, aquatic animal disease reporting, neither do they use their power to influence the setting of international aquatic animal health standards through the OIE. This is of particular concern in the Asian region, where approximately 79% of the value and 88% of the volume of aquaculture produce originates.

In January 2002, the then Fish Diseases Commission of the OIE (renamed Aquatic Animal Health Standards Commission in 2003) suggested to the OIE that aquatic animal health should be a technical item at the 23rd Conference of the OIE Regional Commission for Asia, the Far East and Oceania in 2003.

In preparation for this presentation, a questionnaire was prepared, asking for information in four areas. This report incorporates the responses returned from fourteen of the thirty Member Countries that received the questionnaire. It also draws upon findings of the OIE Aquatic Animals Commission and NACA’s Asia Regional Advisory Group on Aquatic Animal Health.

The main findings of the questionnaire are:

**Aquaculture and animal health services**

The value of livestock production exceeds the value of aquaculture production in ten of twelve Member Countries (in two Member Countries, aquaculture exceeds livestock), but the number of veterinarians servicing the livestock industries is disproportionately higher than the number of aquaculture veterinarians. Compared to a livestock veterinarian, an aquatic animal veterinarian is responsible for approximately 100 times the value of produce.

Aquaculture is predicted to grow in all fourteen Member Countries. In twelve of fourteen Member Countries, initiatives are being taken to ensure that growing aquaculture industries will be adequately serviced with aquatic animal health professionals (veterinarians or others) in the future. These initiatives range from farm level to government level; address infrastructure, education and legislative issues; and involve key stakeholders from governments, academia and the private sector in the process.

Each of the fourteen Member Countries predicts an increasing role for health professionals (veterinarians and others) in their country, predominantly in the areas of animal health field services and extension activities; food safety; disease diagnosis; and teaching, but also in health certification and prescription and monitoring of veterinary medicines (veterinarians) and policy development and aquatic animal welfare (non-veterinarians).

In thirteen of fourteen Member Countries, aquatic animal health is taught as part of the veterinary or other scientific curricula, and in eight of fourteen, it is taught to both veterinary and non-veterinary students.

**Responsible authority**

In seven of fourteen Member Countries, veterinary authorities are responsible for aquatic animal health and would be the lead agency for mounting the response to a major aquatic animal disease outbreak. In the other seven Member Countries, there is either sole or shared responsibility of the fisheries authorities who would take the lead in mounting an emergency aquatic animal disease response.
**Disease reporting**

Twelve of thirteen Member Countries provide information on the aquatic animal health status in their country through the Central Bureau’s annual reporting system, and twelve of fourteen Member Countries provide information through the regional OIE/NACA Quarterly Aquatic Animal Disease reporting initiative.

Whilst eleven of the twelve Member Countries participate in the OIE annual as well as quarterly aquatic animal disease reporting, there are gross inaccuracies and inconsistencies, including not reporting new disease occurrences that would be of major epidemiological significance to other countries in the region.

**Cooperation with OIE**

Only three of thirteen Member Countries regularly provide comments to the OIE on draft texts for the Aquatic Code and the Aquatic Manual, and two of fourteen Member Countries visit the web pages of the Aquatic Animals Commission weekly, the remaining Member Countries report a frequency of monthly or less than once a month.

The findings of the questionnaire confirm the perception that the aquatic animal sector in the region is not as well provided with professional health services as the livestock sector. It appears that whilst aquaculture has been growing rapidly in many countries, there has been no matching expansion of a supporting aquatic animal health infrastructure. However, there is relatively good coverage of aquatic animal health at veterinary and non-veterinary undergraduate training, and most countries are taking additional steps to ensure that growing aquaculture industries will be adequately serviced with aquatic animal health professionals (veterinarians or others) in the future.

The findings of the questionnaire also confirm the previously noted inaccuracies and inconsistencies in aquatic animal disease reporting and the extremely low level of engagement with the OIE regarding draft texts for the Aquatic Code and the Aquatic Manual. Fundamental changes to the Aquatic Code and Aquatic Manual were adopted in 2003. These include the listing of aquatic animal diseases and the requirements for reporting on the status of listed diseases. It is important that Member Countries fully understand these new arrangements and accept and fulfil their obligations on disease reporting.

In five of the seven Member Countries where responsibility rests either solely or partly with the fisheries authorities, contact between the fisheries and veterinary authorities is reported as ‘less than once a month’. This is of concern, especially where the responsibility is shared. Acknowledging that veterinary authorities are usually well experienced in managing terrestrial animal emergency disease outbreaks and fisheries authorities are familiar with the aquatic environment, closer cooperation between the two agencies seems eminently sensible to benefit to the industries whose livelihood may be at stake in a major aquatic disease emergency.

The OIE continues to engage in regional aquatic animal health initiatives, together with the FAO and NACA, but enhanced involvement of both veterinary and fisheries authorities within Member Countries is required to achieve the desired outcomes in areas such as improving Member Countries’ knowledge of OIE standard-setting activities in the field of aquatic animal health and the transparency of epidemiological reporting.

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**1. INTRODUCTION**

The OIE (the World Organisation for Animal Health; http://www.oie.int/) is an intergovernmental organisation, created in 1924, of currently 166 Member Countries. OIE’s main objectives are:

- To ensure transparency in the global animal disease situation,
- To collect, analyse and disseminate veterinary scientific information,
- To provide expertise and encourage international solidarity in the control of animal diseases,
- Within its mandate under the WTO SPS Agreement, to safeguard world trade by publishing health standards for international trade in animals and animal products,
To improve the legal framework and resources of national Veterinary Services, and

To provide a better guarantee the safety of food of animal origin and to promote animal welfare through a science-based approach.

The Fish Diseases Commission was founded in 1960 as one of the OIE’s specialist commission. The Commission’s name was changed in 2003 to Aquatic Animal Health Standards Commission (in brief, Aquatic Animals Commission) to better reflect its scope that covers not just finfish but also molluscs and crustaceans (see item 4.1).

Although the OIE’s scope has covered aquatic animals\(^1\) for over forty years, national Delegates of many Member Countries seem to not fully acknowledge their resulting responsibilities regarding, for example, aquatic animal disease reporting, neither do they use their power to influence the setting of international aquatic animal health standards through the OIE. This is of particular concern in the Asian region, where approximately 79% of the value and 88% of the volume of aquaculture produce originates (FAO 2001).

In January 2002, the then Fish Diseases Commission suggested to the OIE that aquatic animal health should be a technical item at the 23rd Conference of the OIE Regional Commission for Asia, the Far East and Oceania in 2003. OIE’s acceptance of this proposal demonstrates the importance OIE places on aquatic animal health.

For this presentation, a questionnaire was prepared, asking for information in four areas:

- Aquaculture and animal health services,
- Responsible authority,
- Disease reporting, and
- Cooperation with OIE.

The OIE Central Bureau circulated the questionnaire to thirty Member Countries in the region. By the closing date of 17 October 2003\(^2\), fourteen Member Countries had returned a partly or completely filled in questionnaire. They are – in alphabetical order – Australia, Japan, Korea (Republic of), Malaysia, Myanmar, Nepal, New Caledonia, New Zealand, the Philippines, Russia, Sri Lanka, Taipei China, Thailand, and the United States of America. This report incorporates and discusses the responses to the questionnaire. Furthermore, it draws upon findings of the Aquatic Animals Commission and NACA’s\(^3\) Asia Regional Advisory Group on Aquatic Animal Health (see item 5).

The purpose of the report is, however, not merely to demonstrate problem areas and remind national Delegates of their obligations to the OIE. Rather, the report also outlines the opportunities Member Countries have in assisting the OIE to fulfil their mission to guarantee the sanitary safety of world trade in aquatic animals and their products.

### 2. FINDINGS AND EVALUATION OF THE QUESTIONNAIRE

#### 2.1. Aquaculture and animal health services

Figures were collated on the USS equivalent of the values of livestock and aquaculture animal production, respectively, and on the number of veterinarians\(^4\) employed to provide animal health services to these two sectors. Based on the responses of ten Member Countries, the value of livestock production is between 2 and 162 times higher than the value of aquaculture production, however, there are between 6 and 800 times as many veterinarians employed. In two Member Countries, aquaculture production exceeds

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1. The OIE defines aquatic animals as: “live fish (including eggs and gametes), molluscs and crustaceans from aquaculture establishments or aquatic animals removed from the wild, for farming purposes or for release into the aquatic environment. The definition does not cover water-living amphibia, reptiles, birds or mammals.”

2. Six weeks after the deadline.

3. Network of Aquaculture Centres in Asia-Pacific

4. In some Member Countries, aquatic animal health services are provided by fisheries personnel instead of veterinarians. In these cases, the number of fisheries personnel has been used.
livestock production by factors 2 and 8, yet there are 868 and 95 times as many livestock veterinarians employed than aquatic animal health veterinarians.

Another way to compare the levels of service is to calculate the value of production that an individual veterinarian is looking after. For the livestock sector, one veterinarian services between just above US$ 1,000 and US$ 6 million worth of livestock, whilst in the aquatic sector, one veterinarian is responsible for between US$ 1 million and US$ 469 million worth of aquaculture produce.

All respondents think that aquaculture is a growing industry in their country, suggesting that demand for aquatic animal health services will increase in the future.

Whilst the data basis is too small for a statistical analysis, it can safely be concluded that:

The value of livestock production exceeds the value of aquaculture production in ten of twelve Member Countries (in two Member Countries, aquaculture exceeds livestock), but the number of veterinarians servicing the livestock industries is disproportionately higher than the number of aquaculture veterinarians.

Compared to a livestock veterinarian, an aquatic animal veterinarian is responsible for approximately 100 times the value of produce.

Aquaculture is predicted to grow in all fourteen Member Countries.

Acknowledging that the questionnaire may not be fully representative, the emerging picture is one of an aquatic animal sector in the region that is not as well provided with professional health services as the livestock sector. Surprisingly, five out of the fourteen responding Member Countries nevertheless judge that “aquaculture is currently adequately serviced with aquatic animal health professionals (veterinarians or others) in their country”.

Twelve of the fourteen respondents indicate that steps that are being taken in their country to ensure that growing aquaculture industries will be adequately serviced with aquatic animal health professionals (veterinarians or others) in the future. Such steps include:

- Developing national aquatic animal health strategies and plans through multidisciplinary teams,
- Development of aquatic animal health policies and health regulations, including legislation to establish quarantine systems and enable fish farm inspections for disease control,
- Making ‘fish diseases’ a compulsory (rather than optional) subject as part of the undergraduate veterinary curriculum,
- Formalisation of postgraduate specialisation on aquatic animal health,
- More educational courses and technological training for aquatic animal health and aquaculture professionals,
- Official, expertise-based certification of Fish Health Inspectors and Fish Pathologists,
- Improving organisational structures,
- Strengthening laboratory capacity and capability, especially for diagnosis of diseases,
- Strengthening disease surveillance, including at the farm level and with the farmer’s cooperation,
- Cooperation, for example on surveillance and monitoring, between government services, academia, research providers and industry, and
- Registration of all aquaculture establishments, and linking registered establishments into a network with professionals to exchange information, as well as enable access to consultation.

In summary, in twelve of fourteen Member Countries, initiatives are being taken to ensure that growing aquaculture industries will be adequately serviced with aquatic animal health professionals (veterinarians or others) in the future. These initiatives range from farm level to government level; address infrastructure, education and legislative issues; and involve key stakeholders from governments, academia and the private sector in the process.
Each respondent specifies an increasing role for health professionals (veterinarians and others) in aquatic animal health in their country, as follows:
### Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Future activity for veterinarians</th>
<th>Future activity for other professionals</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal health field services, extension activities</td>
<td>12 *</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Disease diagnosis (laboratory)</td>
<td>11</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Teaching</td>
<td>12</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>Health certification</td>
<td>13</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Policy development</td>
<td>9</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Aquatic animal welfare</td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Food safety</td>
<td>11</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Veterinary medicines (prescription, monitoring)</td>
<td>11</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

* = Number of Member Countries (out of fourteen) who ticked this box

Each of the fourteen Member Countries predicts an increasing role for health professionals (veterinarians and others) in their country, predominantly in the areas of animal health field services and extension activities; food safety; disease diagnosis; and teaching, but also in health certification and prescription and monitoring of veterinary medicines (veterinarians) and policy development and aquatic animal welfare (non-veterinarians).

There is generally little difference in allocating these future areas to veterinarians versus non-veterinarians, except that only seven Member Countries consider aquatic animal welfare a future field for veterinarians. Given the strong rating of food safety, it is surprising that prescription and monitoring of veterinary medicines does not rate higher, especially given the recent findings of nitrofuran and chloramphenicol residues in aquatic animal products which have impeded access to European and US markets for several exports countries in the region (Rosenberry 2003).

In eleven Member Countries, aquatic animal health is part of the veterinary curriculum, and it is taught as part of other university courses in ten Member Countries. In eight Member Countries, aquatic animal health is taught to both veterinary and non-veterinary students, while only in one Member Country aquatic animal health is not taught at all. The relatively good coverage of aquatic animal health at veterinary and non-veterinary undergraduate level is encouraging, given the predicted increasing role for veterinarians and non-veterinarians in aquatic animal health.

In summary, in thirteen of fourteen Member Countries, aquatic animal health is taught as part of the veterinary or other scientific curricula, and in eight of fourteen, it is taught to both veterinary and non-veterinary students.

#### 2.2. Responsible authority

Of the fourteen respondents, seven confirm that in their country the veterinary authorities are responsible for aquatic animal health, however, three of those emphasise that fisheries authorities are also involved or are responsible at a lower government level. In the case of a major aquatic animal disease outbreak, the veterinary authorities would be the lead agency for mounting the response in those Member Countries. Contact between veterinary and fisheries authorities in those seven Member Countries ranges from ‘daily’ to ‘less than once a month’.

In the remaining seven Member Countries, there is either shared responsibility between veterinary and fisheries authorities, or the fisheries authorities are the solely responsible agency. In all these cases, fisheries authorities would take the lead in mounting an emergency aquatic animal disease response.

In five of the seven Member Countries where responsibility rests either solely or partly with the fisheries authorities, contact between the fisheries and veterinary authorities is reported as ‘less than once a month’. This is of concern, especially where the responsibility is shared. Acknowledging that veterinary
authorities are usually well experienced in managing terrestrial animal emergency disease outbreaks, and fisheries authorities are familiar with the aquatic environment, closer cooperation between the two agencies seems eminently sensible to benefit to the industries whose livelihood may be at stake in a major aquatic disease emergency.

2.3. Disease reporting

Every year, the Veterinary Services of the OIE, the FAO and the WHO Member Countries submit their responses to an annual questionnaire from the OIE. This questionnaire contains information on the OIE's terrestrial animal List A and List B diseases as well as some aquatic animal diseases. Only one of thirteen responding Member Countries states that they do not provide information on aquatic animal diseases as part of these responses. This is a country where the veterinary authorities are not responsible for aquatic animal health.

The OIE has been a partner in the joint FAO/NACA/OIE Asia Regional Programme of Aquatic Animal Health Management since this programme’s inception in 1998 (see item 5 for details). Under this program, Quarterly Aquatic Animal Disease (QAAD) reporting commenced in mid 1998, on a list of diseases which by default incorporates all aquatic animal diseases listed in the OIE Aquatic Animal Health Code ("Aquatic Code") as well as additional diseases of specific relevance to the Asia-Pacific region. QAAD reporting is coordinated through the OIE Regional Representation for Asia and the Pacific in Tokyo and through the NACA Headquarters in Bangkok. Most participating countries submit identical reports to both the Regional Representation and NACA, but some countries submit their report only to one organisation. This is especially so for countries where responsibility for aquatic animal health does not rest with the veterinary authorities: in these countries, QAAD reports are prepared, but they are not signed by the OIE national delegate, and they are submitted to NACA only. Hence, two sets of QAAD report publications are produced, one set through the Regional Representation, and one set through NACA. Both sets can be viewed on the Internet (http://www.oie-jp.org/ and http://www.enaca.org/, respectively).

Twelve of the fourteen Member Countries are aware of this regional initiative and participate in the OIE/NACA QAAD reporting system (the two non-participating countries are not NACA members or participating governments). Notably, the one country not providing aquatic information through the OIE annual returns (see above) participates in the regional QAAD reporting system through NACA, but not through the Regional Representation. It seems wasteful that such data are collated by this Member Country and not subsequently used for disease reporting through the OIE QAAD as well as annual reporting systems.

In summary, twelve of thirteen Member Countries provide information on the aquatic animal health status through the Central Bureau’s annual reporting system, and twelve of fourteen Member Countries provide information through the regional OIE/NACA Quarterly Aquatic Animal Disease reporting initiative.

Whilst almost all Member Countries participate in disease reporting, item 3 of this report looks at the accuracy of the information provided (see below).

2.4. Cooperation with the OIE

Eight respondents (five of them Member Countries with primary responsibility of veterinary authorities for aquatic animal health) state that they provide comments to the OIE on draft texts for the Aquatic Code and the Manual of Diagnostics Tests for Aquatic Animals ("Aquatic Manual"). However, a subsequent check with the Central Bureau revealed that only three do so regularly.

Those Member Countries that claim to provide comments prepare their responses in consultation with somewhere between 1-5 and over 20 experts. However, it is the experience of the Aquatic Animals Commission that in many Member Countries the Commission’s meeting reports – which have the draft revised or new texts appended – reach aquatic animal health experts either too late for meaningful comment, or not at all.

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5 Food and Agriculture Organization of the United Nations
6 World Health Organization
7 Information is collated on those aquatic animal diseases that were in the past listed as ‘notifiable’. Since May 2003, this category has been abolished, and new reporting arrangements will come into effect in January 2005.
This extremely low level of engagement with the OIE regarding draft texts for the *Aquatic Code* and the *Aquatic Manual* is of concern to the OIE, because Member Countries do not take up the opportunity to influence the setting of international standards that underpin international trade. Therefore, the Director General of the OIE recently urged national Delegates to ensure that aquatic animal health experts in their country as well as the appropriate aquatic animal health authority receive the Aquatic Animals Commission's reports. He stressed that this would greatly improve knowledge of OIE standard-setting activities in the field of aquatic animal health and the transparency of epidemiological reporting (Appendix 1).

The questionnaire also queried the extent to which Member Countries make use of the Aquatic Animals Commission’s web pages (http://www.oie.int/fdc/eng/en_fdc.htm) on the OIE website. The Commission’s pages feature ‘latest news’ and regular updates on aquatic animal disease occurrences, and they provide numerous useful links to e.g. import risk analyses, national aquatic animal disease contingency plans, and the International Aquatic Animal Disease database maintained by the OIE’s Collaborating Centre for Information on Aquatic Animal Diseases.

Two of fourteen Member Countries visit the web pages of the Aquatic Animals Commission weekly, the remaining Member Countries report a frequency of monthly or less than once a month.

### 3. EVALUATION OF DISEASE REPORTING ACCURACY

In the questionnaire, Member Countries were asked to indicate – as ‘present’, ‘never reported’, or ‘no information available’ – the status of all aquatic animal diseases currently listed by the OIE. Some of the listed diseases are of major concern to the region because of their – so far – limited occurrence but ability to spread rapidly. Therefore, the availability of up to date and accurate information of the status of those diseases is essential to all trading partners.

All fourteen respondents filled in the table provided. For six selected diseases, these data were compared with the information available in Handistatus II (http://www.oie.int/hs2/report.asp), in the OIE’s weekly *Disease Information* (http://www.oie.int/eng/info/hebdo/a_INFO.HTM), and in the QAAD reports available on the website of the Regional Representation for Asia and the Pacific (http://www.oie-jp.org/). The diseases chosen are:

- **Fish diseases**: Viral haemorrhagic septicaemia; Spring viraemia of carp;
- **Mollusc diseases**: Infection with *Haplosporidium nelsoni*; Infection with *Perkinsus olseni*; and
- **Crustacean diseases**: Taura syndrome; Yellowhead disease.

Reported status was compared between the various reporting systems, and the appropriateness and consistency of symbols used for reporting on the status of these diseases was checked.

The table in Appendix 2 shows examples of some of the inaccuracies and inconsistencies discovered but does not reveal the identity of the Member Countries. Interestingly, there is no correlation with whether or not the veterinary authorities are in charge of aquatic animal health in those countries. Rather, the same mistakes are made regardless of the lead agency. This is surprising, because one would have assumed a higher level of awareness of, and commitment to, accurate reporting in those countries where the veterinary authorities have primary carriage for, and the national delegate is therefore more closely involved with, aquatic animal health.

Identified shortcomings can be grouped into three categories:

a) Inappropriate symbols are used. For example, a disease is reported as ‘not reported in this quarter’ – when probably ‘never reported 0000’ is meant.

b) The first occurrence of a listed disease is not reported, because there were no clinical signs or mortality associated with the detection of the agent, or reporting on the status of a listed disease ceases in the absence of clinical signs. Such reporting (or lack thereof) disregards that the circumstances for reporting do not require the presence of clinical disease or mortality (see item 4.2.3. below).

c) Several sets of data are officially provided to the OIE (e.g. through annual and quarterly reports), but the data sets are inconsistent with each other. In worst cases one set reports the Member Country to be infected
with a listed disease, while another confirms it to be free. Both sets of data are provided through the national delegate. In some cases the information provided through the questionnaire is not consistent with any of the official OIE reports.

In summary, there are numerous examples of inaccurate reporting of aquatic animal disease status: These include the use of inappropriate symbols; the provision of conflicting information to the OIE’s Tokyo Office and to the Central Bureau; and not reporting the (first) occurrence of listed diseases, for example, because there are no clinical signs or mortality.
It should be noted that further problems arise where data published in the scientific literature are in conflict with the information provided through the national Delegates, however, this was not checked as part of this study. Such non-official data and their sources can be viewed and compared to the official (OIE) data on the website of the International Aquatic Animal Disease database maintained by the OIE’s Collaborating Centre for Information on Aquatic Animal Diseases (http://www.collabcen.net/).

Earlier in 2003, NACA conducted an internal analysis of the QAAD reports received since mid 1998. They concluded that – on the positive side – the process of developing and implementing QAAD reporting had both directly and indirectly contributed to:

- Creating awareness at various levels (farmers/industry/government) in the participating countries on the need for regional disease reporting,
- Raising awareness on the trade benefits of a transparent disease reporting system,
- Creation of “information base” on distribution and spread of diseases of concern within the region, and
- Establishment of national strategies on aquatic animal health.

However, they also found that – considering the Asia-Pacific region as a whole – the QAAD reports are incomplete. The reports do not provide the much needed comprehensive information on the occurrence and distribution of diseases of concern to the region. NACA suggest that the reasons may lie in:

- Ineffective disease data gathering at the country level,
- Lack of compliance by many countries,
- Poor quality of disease reporting;
- Wrong reporting of diseases of concern, and
- Under-reporting of diseases of concern.

Based on the results of the present questionnaire, an underlying issue may be that some Member Countries do not fully appreciate the importance of accurate aquatic animal disease reporting. This may be so because the OIE is not generally known, or its mission understood, or disease reporting is an unusual concept. Also, aquaculture may in the past not have been a major national economy. However, as reported under items 2.1 and 2.2 above, all respondents consider aquaculture a growing industry in their country. Hence it is appropriate to now provide an update on the OIE’s involvement in aquatic animal health, and the resulting obligations for Member Countries.

4. UPDATE ON THE OIE’S INVOLVEMENT IN AQUATIC ANIMAL HEALTH

4.1. The OIE Aquatic Animal Health Standards Commission

The aquatic standards are prepared by one of the OIE’s four elected Specialist Commissions, the Aquatic Animal Health Standards Commission (in brief, Aquatic Animals Commission), with the assistance of internationally renowned experts who also contribute towards the scientific objectives of the OIE. The views of the Delegates of Member Countries are systematically sought through the circulation of draft and revised texts. As well, the Aquatic Animals Commission collaborates closely with the Terrestrial Animal Health Standards Commission on issues needing a harmonised approach, and with the Biological Standards and Scientific Commissions to ensure the Aquatic Animals Commission is using the latest scientific information in its work. The Aquatic Animals Commission has its own pages on the OIE website (http://www.oie.int/fdc/eng/en_fdc.htm). These pages link directly to all documents specific to aquatic animals, and they also feature updates on disease developments.

4.2. OIE Aquatic Standards

The main normative works produced by the OIE for aquatic animals are the Aquatic Animal Health Code (“Aquatic Code”) and the Manual of Diagnostic Tests for Aquatic Animals (“Aquatic Manual”). The International Committee, the general assembly of all Delegates of OIE Member Countries, which constitutes the organisation’s highest decision-making body, adopts the aquatic standards. Just like the standards for terrestrial animal diseases, the aquatic standards are recognised by the World Trade
Organization as reference international sanitary rules, and Member Countries can use these standards to protect themselves from diseases, without setting up unjustified sanitary barriers.
The 6th edition of the Aquatic Code (Office International des Epizooties 2003a) and the 4th edition of the Aquatic Manual (OIE 2003b) incorporate some major modifications agreed during the OIE’s 71st General Session in May 2003. These include revised chapters on ‘notification and epidemiological information’, ‘obligations and ethics in international trade’, as well as two new chapters on ‘disease notification criteria’ and ‘diseases listed by the OIE’. The International Committee also adopted a new chapter on ‘Requirements for surveillance for international recognition of freedom from infection’; this new chapter gives general guidance based as far as possible on the general principles provided in the [Terrestrial] Animal Health Code. All these changes are fundamental and therefore explained in more detail below:

4.2.1. Disease categories have been abolished

With the 6th edition of the Aquatic Code, the concept of different categories of listed diseases has been abolished, implementing Resolution XXIII passed by the International Committee in May 2001. As a result, there is now only one single list of aquatic animal diseases (see Appendix 3). This current list combines all those aquatic animal diseases that were previously listed as either ‘notifiable’ or ‘other significant’ by the OIE. Reporting requirements now relate to all those diseases (see item 4.2.3).

It is important that Member Countries understand that the primary purpose of listing a disease is to assist the OIE to fulfill its mission to ensure transparency in the global aquatic animal disease situation, by enabling OIE to collate and disseminate the information received in reports on the status of those listed diseases. With all Member Countries now required to regularly report on the status of all listed diseases, it is crucial to critically assess which diseases need to be on the list.

Member Countries also need to understand that they are free to request from trading partners information on non-listed diseases, or to develop and enforce other import health measures to protect themselves against non-listed diseases, under the provisions of the World Trade Organization’s Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) (World Trade Organization 1994).

4.2.2. New disease listing criteria have been adopted

Following from Resolution XXIII passed by the International Committee in May 2001, the Aquatic Animals Commission progressed the development of new and transparent criteria for listing an aquatic animal disease, which were subsequently adopted and published in Article 1.1.2.1 of the 6th edition (2003) of the Aquatic Code. Diseases suggested for listing must meet relevant parameters under the headings ‘Consequences’, ‘Spread’ and ‘Diagnosis’ (see Appendix 4). A Member Country proposing to list an aquatic animal disease with the OIE must demonstrate that the disease fulfils the new, adopted criteria for ‘Consequences’, ‘Spread’ and ‘Diagnosis’.

4.2.3. New disease reporting obligations for Member Countries have been adopted

The OIE recognises that in many Member Countries, an authority other than the Veterinary Administration may be responsible for aquatic animal health. The Aquatic Code therefore defines the Competent Authority as:

“… the National Veterinary Services, or other Authority of a Member Country, having the responsibility and competence for ensuring or supervising the implementation of the aquatic animal health measures recommended in this Aquatic Code.”

Nevertheless, according to Section 1.2 of the Aquatic Code, the responsibility for providing the OIE with disease notifications and epidemiological information rests with the Veterinary Administration in all Member Countries.

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At the 71st General Session in 2003, the International Committee accepted, in principle, the concept of abolishing List A and List B diseases of terrestrial animals and merging all the listed diseases into a single list, thereby implementing the same Resolution XXIII of 2001.
Chapter 1.2.1 on ‘Notifications and Epidemiological Information’ (Section 1.2) has been updated in the Aquatic Code to reflect the new disease notification system adopted by the International Committee in 2003. This new system implements Resolution XXIII passed in 2001. Whilst there is only one single list of aquatic animal diseases, there are two ‘categories’ of urgency for reporting the listed diseases. Regular reports on the status of all listed diseases must be provided to the OIE through the annual returns and – in the Asia Pacific region – through the QAAD reporting system. Under specific epidemiological circumstances, notification must be provided to the OIE within 24 hours (see Appendix 5); this applies to all listed diseases.

For all listed diseases, regular (e.g. annual, quarterly) status reports must be provided to the OIE. However, urgent notification on all listed diseases is required if the disease occurs for the first time or re-occurs; if it occurs in a new host species, or with a new pathogen strain, or in a new disease manifestation; if there is potential for international spread; or if there is newly recognised zoonotic potential.

Urgent notification can also apply to non-listed diseases if there is a case of an emerging disease or pathogenic agent when there are findings that are of epidemiological significance to other countries.

In this context, it is important to understand that the circumstances for regular and urgent notification do not require the presence of clinical disease or mortality. The OIE recognises that scientific knowledge concerning the relationship between disease agents and diseases is constantly evolving and that the presence of an infectious agent does not necessarily imply the presence of a disease: The 6th edition of the Aquatic Code clarifies in Article 1.2.1.2.4. that the presence of an infectious agent, even in the absence of clinical disease, should be reported.

4.2.4. New requirements for surveillance for international recognition of freedom from infection

In the future, the requirements to declare a country or zone free from infection with a listed disease will differ depending on the previous infection status and will take into account:

- Absence of susceptible species,
- Historical freedom,
- Last known occurrence within the previous 25 years, and
- Previously unknown infection status.

Demonstrating freedom from infection involves providing sufficient evidence to demonstrate that infection with a specified agent is not present in a specified population. In practice, it is not possible to definitively prove that a population is free from infection (unless every member of the population is examined simultaneously with a perfect test with both sensitivity and specificity equal to 100%). Instead, the aim is to provide adequate evidence (to an acceptable level of confidence), that infection, if present, is present in less than a specified proportion of the population.

This is a huge step forward from the previous ‘one-size-fits-all’ approach of targeted surveillance of 150 animals, regardless of test specificity and sensitivity, disease specifics, or epidemiological circumstances. Details on these new requirements are published in the Aquatic Manual in Chapter 1.1.4, but the format and content of the individual disease chapters in the Aquatic Code as well as Aquatic Manual will require substantial amendment to take into account these new requirements. Following the consideration of Member Country comments, the Commission will prepare draft templates for Aquatic Code chapters for the listed diseases for adoption by the International Committee in May 2004.

The OIE defines ‘emerging disease’ as: « a newly recognised serious disease, the cause of which may or may not yet be established, that has the potential to be spread within and between populations, for example by way of trade in aquatic animals and/or aquatic animal products. »
4.3. OIE’s involvement in aquatic animal welfare

Animal welfare was identified as a priority in the 2001-2005 OIE Strategic Plan. Member Countries had decided that, as the international reference organisation for animal health and zoonoses, the OIE must provide international leadership on animal welfare. Although the SPS Agreement does not cover animal welfare, Member Countries wished to have guidelines and recommendations to assist them in bilateral negotiations.

Member Countries recognised that, as animal protection is a complex, multi-faceted public policy issue that includes important scientific, ethical, economic and political dimensions, the OIE needed to develop a detailed vision and strategy incorporating and balancing these dimensions.

In order to implement the new mandate, the Director General convened an Ad hoc Group on animal welfare the recommendations of which were unanimously adopted during the 70th General Session in May 2002. A permanent Working Group on Animal Welfare was then established and held its first meeting in October 2002.

The International Committee decided that the OIE would give priority to the welfare of animals used in agriculture and aquaculture, and that, within that group, the topics of transportation, humane slaughter and killing for disease control purposes would be addressed first, followed by housing and management. Other topics, such as research animals and wildlife, would be addressed as resources permitted.

The former President of the then Fish Diseases Commission – Professor Dr. Tore Håstein – has been appointed as a Member of the Working Group on Animal Welfare to provide expertise on fish. The Group will meet in February 2004 prior to the OIE Global Conference on Animal Welfare. A topic on aquatic animals will be included on the agenda of this conference.

5. REGIONAL AQUATIC ANIMAL HEALTH INITIATIVES

The Regional Commission for Asia, the Far East and Oceania has been formed by the OIE to promote cooperation, study specific problems encountered by Veterinary Services and organise cooperation activities on a regional level. The OIE maintains a Regional Representation for Asia-Pacific with the goal to provide regionally adapted services to Member Countries so that they may strengthen the surveillance and control of animal diseases in the region. Improving aquatic animal disease surveillance is one of the programs of the Regional Representation for Asia-Pacific.

The OIE has been a partner in the joint FAO/NACA/OIE Asia Regional Programme of Aquatic Animal Health Management since this program’s inception in 1998. This programme was successful in developing the Asia Regional Technical Guidelines on Health Management for the Responsible Movement of Live Aquatic Animals and the Beijing Consensus and Implementation Strategy (FAO/NACA 2000). The Technical Guidelines were adopted in principle by 21 participating governments (all but one are OIE Member Countries) in the Asian region in July 2000 and subsequently adopted by the 9th Meeting of the Association of Southeast Asian Nations (ASEAN) Fisheries Working Group held in September 2001 in Bali, Indonesia. A Manual of Operational Procedures (FAO 2001) and an Asia Diagnostic Guide to Aquatic Animal Diseases (Bondad-Reantaso et al. 2001) are two further publications arising from this cooperation. All documents are available on the NACA website (http://www.enaca.org/).

Whilst the regional programme came to an end in 2001, there was consensus that the momentum must not be lost. NACA suggested establishing the Asia Regional Advisory Group on Aquatic Animal Health. Membership would include the OIE through a representative of the OIE’s Tokyo office and a delegate of the OIE Aquatic Animals Commission. The NACA Governing Council at its 13th meeting, held in Malaysia in January 2002, approved the composition of the Asia Regional Advisory Group on Aquatic Animal Health and its Terms of Reference. The Council also endorsed NACA’s institutional support for the Advisory Group and reiterated its strong support to the Aquatic Animal Health Program, in general. The Terms of Reference of the Advisory Group are to provide advice to NACA through the following activities:

10 Australia, Bangladesh, Cambodia, China P.R., Hong Kong China, India, Indonesia, Iran, Japan, Korea (D.P.R.), Korea (R.O.), Laos (P.D.R.), Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand and Vietnam.
• Review and evaluate quarterly regional aquatic animal disease reporting,
• Evaluate progress made on implementation of the *Technical Guidelines*,
• Advise in identification and designation of regional aquatic animal health resources, as specialist advisers, Regional Reference Laboratories and Resource Centres,
• Revision of the *Technical Guidelines, Manual of Procedures* and *Asia Diagnostic Guide for Aquatic Animal Diseases* as required,
• Develop procedures for advising on dealing with aquatic animal health emergencies, and
• Review the TOR as and when required.

Through its membership and linkages, the Asia Regional Advisory Group on Aquatic Animal Health provides an excellent means to assist in strengthening the much-needed regional cooperation on aquatic animal health not only between countries, but also between veterinary and fisheries authorities.

### 6. CONCLUSIONS

Acknowledging that the questionnaire may not be fully representative, the emerging picture is one of an aquatic animal sector in the region that is not as well provided with professional health services as the livestock sector. It appears that whilst aquaculture has been growing rapidly in many countries, there has been no matching expansion of a supporting aquatic animal health infrastructure. However, there is relatively good coverage of aquatic animal health at veterinary and non-veterinary undergraduate training, and most countries are taking additional steps to ensure that growing aquaculture industries will be adequately serviced with aquatic animal health professionals (veterinarians or others) in the future. Only seven Member Countries consider aquatic animal welfare a future field for veterinarians. Given the strong rating of food safety, it is surprising that prescription and monitoring of veterinary medicines is also at the bottom of the list of future activities.

The reported infrequent contact between veterinary and fisheries authorities – especially in those seven Member Countries where responsibility rests either solely or partly with the fisheries authorities – is of concern. Given the complementing expertise of the two authorities, closer cooperation seems eminently sensible especially when industries’ livelihood may be at stake in a major aquatic disease emergency.

There are numerous examples of inaccurate reporting of aquatic animal disease status: These include the use of inappropriate symbols; the provision of conflicting information to the OIE’s Tokyo Office and to the Central Bureau; and not reporting the first occurrence of listed diseases. Surprisingly, there is no correlation with whether or not the veterinary authorities are in charge of aquatic animal health in those countries.

Fundamental changes to the *Aquatic Code* and *Aquatic Manual* were adopted in 2003. These include the listing of aquatic animal diseases and the requirements for reporting on the status of listed diseases. It is important that Member Countries fully understand these new arrangements and accept and fulfil their obligations on disease reporting.

There is an extremely low level of engagement with the OIE regarding draft texts for the *Aquatic Code* and the *Aquatic Manual*. This means that Member Countries do not take up the opportunity to influence the setting of international standards that underpin international trade. It is also the experience of the Aquatic Animals Commission that in many Member Countries the Commission’s meeting reports – which have the draft revised or new texts appended – reach aquatic animal health experts either too late for meaningful comment, or not at all.

It is disappointing to see how little use Member Countries make of the Aquatic Animals Commission’s web pages that provide easy and free access to very useful information.

Despite all identified shortcomings, the very fact that nearly fifty percent of the Member Countries returned a filled-in questionnaire demonstrates that aquatic animal health may be increasing in profile with those Member Countries, and justifies hopes that with the combined efforts of the OIE; of Member Countries and their veterinary and fisheries authorities; and of other regional and international organisations such as NACA and FAO, aquatic animal health will eventually receive the attention it deserves at national and international levels. Hopefully, this will happen in a proactive manner, and not because an economically crippling epidemic provides the *force majeure*.
REFERENCES


