APEC, FAO, NACA, and OIE enhance Capacity on Risk Analysis (IRA) in Aquatic Animal Movement in Asia-Pacific region

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Movement of aquaculture species and trans-boundary diseases

Species movement for aquaculture dates back to the mid-19th century when ancient Romans and medieval European monks transported common carp and perch around Europe and in the Roman Empire; the Greeks also transported oysters during the Golden Age of Greece around the Greek Islands[1]. The past three decades have seen tremendous expansion, intensification, and diversification of the aquaculture sector which now has become increasingly reliant on external inputs through movements of live aquatic animals and animal products (broodstock, eggs, fry/fingerlings, seed, and feed). The present trend towards world trade liberalization and globalisation as well as improved transportation efficiency contributed greatly to this development. The aquaculture sector has thus become a major supplier of aquatic food, provider of direct and indirect employment, a great source of foreign earnings through trade.

Some of the most serious diseases faced by the aquaculture sector are those pathogens and diseases which were spread and introduced through movements of hatchery produced stocks, new species for aquaculture and development and enhancement of the ornamental fish trade. The sector is faced with what is now known as trans-boundary aquatic animal pathogens/diseases (TAAPs/TAADs), similar to the TAPs in the livestock sector. These are pathogens/diseases which are highly transmissible, with the potential for very rapid spread irrespective of national borders and cause serious socio-economic consequences. Movement of live aquatic animals has clearly been the major mode of transfer and spread of TAADs/TAAPs[2]. Classic examples are serious pathogens such as White Spot Disease (WSD), Yellowhead Disease (YHD), and Taura Syndrome Virus (TSV) affecting crustaceans; Epizootic Ulcerative Syndrome (EUS), Viral Nervous Necrosis (VNN) affecting finfish; *Perkinsus* sp., and *Bonamia* sp., *Haplosporidium* sp., protistan parasites, affecting molluscs. Koi herpes virus (suspected to cause a serious outbreak of koi and common carp in Indonesia since April 2002), Spring Viremia of Carp (reported for the first time in the US in July 2002); and *Haplosporidium nelsoni*, (reported for the first time in Canada in October 2002) are recent cross border issuess (http://www.oie.int).

Risk analysis in the health management process

What is risk analysis?

MacDiarmid[3] defined 'risk analysis' as a tool intended to provide decision-makers with an objective, repeatable and documented assessment of the risks posed by a particular course of action. It is intended to answer the following questions:

- What can go wrong?
- How likely is it to go wrong?
- What would be the consequence of its going wrong?
- What can be done to reduce either the likelihood or the consequence of its going wrong?

In the past, the 'normal' unsuspecting, unplanned and qualitative approach has led to inconsistent policy decisions and restrictions made for different methods of transfer, species and life-cycle stages (e.g., broodstock, larvae, fertilised ova, gametes) which can be imported, geographic ranges and requirements for mitigative measures (e.g., quarantine, health certificates, etc.). This 'ad hoc' approach is now under increasing scrutiny and the global trading system is increasing the demand for a more structured approach to risk analyses for aquatic animal transfers and policy decisions based on science[4].

A multilateral mechanism to protect human, animal and plant health in WTO's member countries was established by the Uruguay Round's Sanitary and Phytosanitary (SPS) Agreement. WTO member countries are protected from other countries' use of health-related measures to disguise barriers to trade. SPS measures, within the context of the SPS Agreement, refer to any measure, procedure, requirement, or regulation, taken by governments to protect human, animal, or plant life from the risks arising from the spread of pests, diseases, disease-causing organisms, or from additives, toxins or contaminants found in food, beverages, or feedstuff. The SPS Agreement contains 14 articles and 3 annexes covering the following: basic rights and obligations; harmonization; equivalency; risk assessments; pest- or disease-free areas; transparency; control, inspection and approval procedures; technical assistance; special and differential treatment; consultations and dispute settlement; administration; and implementation (http://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm). To comply with WTO-SPS obligations, governments are encouraged to implement import/export decisions based on international standards or using science-based risk assessments.

While there are more advances in conducting IRAs in the livestock and plant sectors, IRA for aquatic animal movement is a new concept and a new process. It may appear complicated and it some cases it is complicated. Therefore, it is important that countries, at the first instance, familarize, understand and embrace the concept and not be discouraged by the expected intricacy of the process[5].

Import risk analysis is the process by which importing authorities determine whether live aquatic animal imports or their products (e.g. genetic material, feed stuff, biological products, pathological material) pose a threat to the aquatic resources of their country.

The process identifies the hazards associated with the movement of a particular commodity and mitigative options assessed; the results of the analyses are communicated to the authorities responsible for approving or rejecting the import. IRA is usually undertaken by the Competent Authority (CA) for the importing country; IRAs can, nonetheless, range from an individual farmer analyzing and assessing the risks associated with a potential, specific importation, to a full range IRA carried out by a multidisciplinary team[1]. It is systematic, iterative, transparent, science-based and the process involves four major steps[6].

- Hazard Identification;
- Risk Assessment;
- Risk Management; and
- Risk Communication, which is a step that takes place throughout the entire IRA process.

There are practical difficulties in interpreting the provisions in the SPS Agreement. It is therefore necessary that developing countries are empowered with appropriate skills that will allow them to develop technically valid import restrictions through the application of the risk analysis process so that they are able to meet international obligations. Countries will be confronted with a range of conditions and scenarios when conducting an IRA and regulations will vary from country to country. For developing countries, the greatest struggle will be deciding what constitutes "acceptable risks" and establishing consistent approach to the concept of 'appropriate levels of protection'; availability of information (both quantity and quality), capacity of staff and legislation. Legislation to enforce sanitary measures recommended from an IRA, disease surveillance information to demonstrate country/ regional freedom from specific disease agents and that which determines the need for applying sanitary measures, and scientific input from disease specialists and risk analysts are some of the more important requirements for conducting an IRA.

As more skills and expertise in risk analysis are developed and as more scientific information become available, we will see good models of risk analysis that will provide further guidance to countries. There are also expert input and experience that can be utilised from the livestock and plant sectors.

Of the three SPS issues that have been elevated to WTO's dispute settlement panels – the Canada vs Australia dispute on salmon provides valuable lessons. It is to the best interest of trading partners to avoid as much as possible taking formal WTO dispute settlement action because it could be very costly and resource intensive. At the bilateral level, there are opportunities for trading partners to undertake consultation and for developed countries to assist developing country trade partners.

Current efforts on IRA for aquatic animals

Since 1997 when the European Association of Fish Pathology organized, at its 8th EAFP Conference, the EAFP Risk Assessment in Aquaculture, there followed more activities all aimed at better understanding and gaining skills in conducting IRAs for aquatic animal health. In 2000, the Office International des Epizooties (OIE) organized the International Conference on Risk Analysis in Aquatic Animal Health. This conference was organized in order to initiate international dialogue and provide information to scientists, academics and regulators responsible for developing, evaluating and implementing import measures in aquatic animal health[7]. This year, the Fisheries Working Group of the Asia-Pacific Economic Cooperation (APEC) in cooperation with the Food and Agriculture Organization of the United Nations (FAO), the Network of Aquaculture Centres in Asia-Pacific (NACA), and the OIE jointly implements a project (APEC FWG 01/ 2002 "Capacity and Awareness Building on Import Risk Analysis (IRA) for Aquatic Animals") that will bring together policy makers, administrators, aquatic animal health scientists and private sector representatives to build awareness and capacity to understand and undertake risk analysis for aquatic animals at national and regional levels. Two regional training workshops were conducted: the First Training/Workshop in 1-6 April 2002 in Bangkok, Thailand, participated by 23 governments; and the Second Training/Workshop in Mazatlan, Mexico from 12-17 August 2002, with participation from 20 countries in Asia-Pacific and the Americas. This Project is expected to (a) produce a Manual on IRA for Aquatic Animals which will provide guidance to economies and governments in conducting IRAs for the international trade of aquatic animals; (b) establish a network of people with skills and capacities on IRAs that will lead to increased contacts between individuals and governments in undertaking improved biosecurity measures in the international trade of aquatic animals; and (c) improve capacity in surveillance, monitoring and reporting of aquatic animal diseases and contingency plans for emergency disease situations.

Conclusion

IRA is a core activity that will assist in minimizing the threat of trans-boundary aquatic animal diseases. There is much more that we need to understand with respect to risk analyses. Many regional/ international and inter-governmental organizations and professional bodies are making the right initiative in taking the first step at providing support to projects that will raise awareness, and build capacity. There is an enormous challenge ahead of us. Aquaculture health will receive high priority and we will see more and more cooperative efforts among stakeholders at all levels, hopefully to the full benefit of fishfarmers and farming communities heavily dependent on this sector for their subsistence.

Health management is a shared responsibility, and each stakeholder has an important role to play. Aquaculture suffered enormous losses and there are now important lessons learned from the past. Movement of aquatic animals and its products is a necessity for aquaculture development at both subsistence and commercial levels. Intensified trade will, however, foster increased global exposure to disease agents, the impacts of which may be irreversible. On the other hand, strict or excessive controls will also lead to trade underground. The risks of major disease incursion and newly emerging diseases will continue to threaten the sector, and unless appropriate health management measures are put in place, will cost the government and private sectors much

more in terms of production losses, and efforts to contain and eradicate them than would have spent in preventing their entries into the system. There is no clear cut strategy - strong national commitment from responsible administration and pro-active support and cooperation from the private sector and stakeholders toward harmonizing health management measures and promoting responsible trans-boundary movement of aquatic animals and products will reduce the risk.

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World Trade Organizations's Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)

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end up taking money out of all our pockets." (John Sackton, New.Seafood.com).

Ho Chi Minh City announces aquaculture plans

Ho Chi Minh City has worked out solutions to develop its aquaculture sector into an economic spearhead by 2010, reports the Vietnam News Agency. Local enterprises plan to invest about USD 65 million for developing infrastructure facilities and importing advanced technology by 2005, and a similar amount for the 2006-2010 period.

One of the aims of the investment is to help local enterprises meet the requirements of the US Hazard Analysis and Critical Control Point (HACCP), International Standard Organisation (ISO), and Good Manufacturing Product (GMP). It is believed that with those international certificates, Vietnamese seafood products can enter Western European and North American markets.

Ho Chi Minh City now has 14 frozen seafood processing companies licensed to directly export their products to the EU market. The figure of the whole country is 68.

One-sixth of the 300 local processing establishments specialize in processing frozen seafood products for export with a combined capacity of 120,000 tonnes per year. However, local processors currently run at only 50 per cent of their designed capacity, turning out 60,000 tonnes of frozen aquatic products.

About 50 local factories specialize in processing dried aquatic products, mainly dried cuttlefish. Meanwhile, 100 processing establishments in the city annually produce between 25-30 million litres of fish sauce. The city also serves as a fishfeed supply centre with a network of more than 20 processors and six suppliers. (By FIS Asia).