



AQUACULTURE READINESS DATA PROJECT – BIOSECURITY AND AQUACULTURE INFORMATION SHEET 3

THE NEED FOR QUALITY DATA

This is the third in a series of three information sheets explaining what has been learned from the MPI's Aquaculture Readiness Data (ARD) project. Key findings from the project showed that there is a need for improving farm data (farm locations, stocking densities, and animal movements), better record keeping and reporting in general, and modelling to support management decisions. These findings are explained in this and two other information sheets:

- » **INFORMATION SHEET 1** – Aquaculture –Biosecurity preparedness
- » **INFORMATION SHEET 2** – Defining dispersion areas for aquatic pests and diseases

As New Zealand's aquaculture industry grows there is a recognised need to develop good baseline data and data recording systems that can support effective biosecurity and animal health decisions across the industry.

To determine the aquaculture industry's readiness for collecting and using this data, the Ministry carried out the ARD project in 2010/2011. The project was required to develop a preliminary New Zealand-specific spatial model of the likely spread of pests and diseases within and among aquaculture sites (including farms, processing facilities, and hatcheries).



WHAT INFORMATION IS REQUIRED FOR BIOSECURITY

Up-to-date information that is readily accessible is essential for a fast and effective response to a biosecurity emergency. In some parts of the world, like the European Union, thorough record-keeping has become mandatory for entry into consumer markets.

Below are the types of information that should be collected and maintained.

BASIC INFORMATION

At a minimum there is a need for basic information to be readily available. This information includes:

- » contact details for the person managing the farm;
- » size of the farm;
- » spatial co-ordinates;
- » species farmed; and
- » number (or volume) of animals on farm (indicate seasonal variations).

INPUTS INTO THE FARM SYSTEM

Recording key inputs into the farm system are crucial to biosecurity activities. These inputs include:

- » number (or volume) of introduced animals (for example, broodstock, spat, and fingerlings); and
- » the source of any introduced animals, along with date of transfer and, where applicable, their health status (for example, if testing has been undertaken).

OUTPUTS FROM THE FARM SYSTEM

Relevant output information needs to be maintained including:

- » mortality records (including date and age category);
- » any waste generated and disposal methods (for example, shells, offal, dead animals, effluence);
- » number of animals transferred off site (for example, to grow-out farms or to processing plants); and
- » volume and type (for example, fillets, shucked) of animal products.

MOVEMENTS OF PERSONNEL AND RESOURCES

Recording the movements of personnel and resources is equally as important as maintaining information on stock. This type of information should include movements of:

- » personnel (for example, divers);
- » equipment (for example, longlines and nets);
- » and vessels (for example, barges).

FARM OPERATIONS

Operational information that should be maintained for optimal biosecurity preparedness and response and as part of good audit-trail practice includes:

- » husbandry interventions (for example, change of feed, change of water circulation system and fallowing);
- » adverse events (for example, storms and algal blooms);
- » any on-farm monitoring data including water temperatures and biotoxin testing; and
- » internal farm movements between different parts within the same farm such as, hatchery, nursery, farming and processing.

CENTRALISING DATA

Overseas there is an increasing trend in developing secure online data entry systems to collect information from fish farmers. Advantages of these online databases include the ability to have real-time surveillance data that can be analysed for disease management purposes.

In terrestrial farming it has long been recognised that there is a need for validated, reliable information on animal locations, numbers and movements to track and maintain the health of stock. Many countries, including New Zealand, have developed robust databases (for example, FarmsOnLine) to improve animal health, disease prevention and emergency response.

CURRENT STATE OF AQUACULTURE DATA

Through the ARD project, researchers found that the collection, maintenance, and accessibility of data varied widely across the aquaculture industry. This lack of consistent information poses a number of associated biosecurity risks.

There are several data collection systems that have relevance for aquaculture in New Zealand. They include:

- » FishServe is a privately owned information management system that administers registration of marine fish farmers.
- » MPI Marine Biotoxins database is a regulatory system that contains both commercial (for market certification) and non-commercial (for public health) data on biotoxin surveillance in shellfish growing areas.

- » SAM-D (Sampling Attribute Management) is an MPI food safety database, with more potential for information accrual. It has been successfully trialled within the shellfish industry for biotoxin testing and should be available nationwide in the near future.
- » FarmsOnLine is a government-owned database in service since April 2011. It was developed to collect accurate information on rural farms (agriculture and possibly land-based aquaculture) to enable rapid response to a biosecurity outbreak or to other natural event emergency.

Currently none of the systems listed above, however, have complete and readily available information for use in a biosecurity emergency.

NEXT STEPS

The Government's *Aquaculture Strategy and Five-year Action Plan* sets out the Government's intended actions and activities to support the growth of New Zealand's aquaculture sector over the next five years. As part of this work, MPI will be working with the aquaculture sector to improve biosecurity preparedness. This will include looking at ways to improve the information required to be recorded and reported to better manage biosecurity preparedness and response. An aspect of this work will be centralising required data for marine and land-based aquaculture.

Additionally, MPI will be working with the aquaculture industry to establish biosecurity plans for key growing areas. This will involve effectively engaging with the aquaculture sector to improve and maintain New Zealand's world-class biosecurity system

FURTHER READING

[Aquatic Animal Pest and Disease Readiness Planning and Intelligence – Phase I](#)

[Aquatic Animal Pest and Disease Readiness Planning and Intelligence – Phase II](#)