Aquatic Emergency Animal Disease Response Funding:
A proposed new approach to working out proportional contributions

Aquatic Deed Working Group Information Paper
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Background
A formal agreement (a Deed) between governments and the private sector for responding to emergency aquatic animal disease (EAD) incidents has been identified as an important measure to enhance Australia’s management of aquatic animal diseases.

An aquatic Deed will require a funding framework where those who benefit from the response pay an appropriate and equitable share of the total response costs ("the Beneficiary-Pays-Principle"). The first tier of cost sharing is to work out the percentage of the total response costs to be paid by affected governments (in aggregate; representing the public) and the percentage that potentially affected industries should pay (in aggregate). The second tier of cost-sharing would determine the proportional contributions among affected governments and also among affected industry sectors; only the first tier is considered in this paper as the first step towards developing the funding framework.

The problem
To be equitable, the size of response funding contributions should reflect the size of the benefit received, that is, those who benefit more, pay more. However, working out the relative benefits flowing from an aquatic EAD response to the many beneficiaries of such a response is complex. This is because diseases can affect farmed and wild aquatic animals, they can have impacts on aquaculture businesses and on users of shared wild animal resources, and they can have impacts on aquatic biodiversity. Disease control therefore has many beneficiaries, including:

- fish farmers who own fish that are susceptible to the disease
- commercial and recreational fishers who use shared aquatic animal resources
- the wider public who may expect preservation of biodiversity and healthy aquatic ecosystems.

Approaches to date
The existing response Deeds for livestock industries (EADRA\(^1\)) and plants (EPPRD\(^2\)) categorise diseases and pests by impact, to reflect equitable proportional response funding

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contributions by governments and affected industries. This approach has been tried for aquatic EADs but presented difficulties: eg how is one to weigh the effect that an aquatic disease may have on native fish species with its effects on a fish farm? And unlike livestock diseases and plant pests, so much less is known about diseases of aquatic animals – there would be a lot of value judgement involved.

- It would be very difficult to design a method by which an expert panel could propose a category for each aquatic EAD in a way that is sufficiently credible, robust and defensible to be acceptable to all potentially paying parties. It would also be a costly process that would take a lot of time.

The benefit of a response to fish farmers can be calculated easily as the “market value” of being able to sell healthy fish. However, most public benefits are much harder to quantify because there is no market value. An example is preserving a native species so that it can be enjoyed by recreational anglers and the public at large as part of a healthy aquatic ecosystem: what dollar value should be placed on these benefits?

It is possible to use non-market valuation methods to quantify public benefit; however, these methods:

- as yet are not commonly used in Australia
- require expert design (and experts may be hard to find)
- probably would be costly and lengthy
- are best conducted as part of broader cost-benefit analyses of the response, which in turn would add to cost and length.

Doing this for each aquatic EAD would be a major undertaking.

A new approach

The Aquatic Deed Working Group is exploring a much simpler, faster, and more cost-effective approach that will nevertheless meet the core principles of funding biosecurity responses, including:

1. Those who benefit from aquatic EAD control contribute to its cost (“beneficiary pays”).
2. Beneficiaries from aquatic EAD control share the costs of that control subject to the efficiency of doing so (“efficiency principle”).
3. Governments contribute to the cost of aquatic EAD control in proportion to the public benefit accruing from it.
Considering these principles, the working group is proposing that **an averaged fixed cost sharing formula for all aquatic EADs** would be most suitable for an aquatic Deed.

This does not need to preclude the later allocation of a different split as and when a party to the agreement can provide a case that alternative funding proportions might be more appropriate.

Appropriate relative proportions of a fixed split between the Commonwealth government, the states and territories (in aggregate), and affected industries (in aggregate), have been explored by investigating the four disease categories used in the existing Deeds (the livestock and plant Deeds) and their respective funding splits. Figure 1 below shows:

- The “A third / a third / a third” formula, which is often used when governments and industries jointly fund animal and plant health programs and where working out relative benefits in each instance would not be cost effective (top row).
- The categories that have been applied to date in responses under the plant and livestock agreements (second row from the top). Only categories 2 and 3 have been used, on an equal number of occasions.
- The average of the 4 categories defined in the plant and livestock Deeds (third row from the top).
- Proportional funding proportions in each of the 4 categories used in the plant and animal Deeds (four bottom rows).

**Figure 1: Proportional response cost shares: different formula**

It is obvious that the “A third / a third / a third” formula comes very close to the average of the funding splits in the existing Deeds, as well as the splits actually used to date. Importantly, in the “A third / a third / a third” option, the default 66.66% total government cost share would also acknowledge that protection of aquatic animal resources will often give rise to significant public benefits.
The graph below shows – in a hypothetical example – how these splits would work.

- There is an aquatic EAD response on a fish farm in one state X only, but the fish species (“Fysh”) exists everywhere except in the Northern Territory and Tasmania.
- “Fysh” is farmed in the other jurisdictions, and it is also a popular catch for recreational fishers; therefore, “Fysh” farmers and the public in all those jurisdictions would benefit from the response.

The advantages of a fixed cost sharing formula for all aquatic EADs are:

- overcoming a hurdle in the further development of an aquatic EAD response Deed
- immediate applicability in an outbreak
- negligible management costs, even on a long-time basis, and
- providing the desired equity and efficiency of response funding contributions.

“Applying an averaged fixed cost sharing formula for all aquatic EADs would convey a large number of advantages... the costs are almost negligible, the benefits are high, and the risks are low.”

Summary

Applying an averaged fixed cost sharing formula for all aquatic EADs, including unknown ones, would convey a large number of advantages. It provides a balance between developing a more precise but more complex and hence more expensive model, and developing a simpler and less expensive albeit less precise one. Perhaps most importantly, it would not hold up progression of the further development of an aquatic EAD response Deed.

For more information, please visit: