



# Cost Sharing for Multiple Industries

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# Cost Sharing for Multiple Industries

## PURPOSE OF THIS PAPER

Outline the recommended approach for sharing costs between industry players where more than one industry is adversely affected by the organism in question.

## GUIDING PRINCIPLES

The solution should support the following principles:

- Consistent and fair treatment of all industries
- Cost shares will be determined based on proportional benefit

## BACKGROUND

The original proposal for sharing costs between industries was to use a simple ratio based on the calculated benefits. This is a logical approach, but it works best where there is certainty around the calculated numbers. We know that this is not likely to be the case and as such the use of a straight ratio will tend to encourage substantial debate around the numbers, as each small movement will result in a percentage change in the ratio.

The agreed approach for sharing between government and industry acknowledged that this level of debate around the individual benefits was not desirable and instead proposed a system of broad buckets. The following provides an alternative method that uses the benefit calculation to put shares into broad categories. In addition it provides a mechanism to allow the benefits ratio to take into account the changing values of industries and hence the changing level of benefit over time.

## PROPOSED PROCESS

Use the benefits calculation to assign a high, medium or low impact score for each industry.

The high, medium and low categories would be assigned as follows:

|      |                        |
|------|------------------------|
| High | >25% of industry value |
| Med  | 5 – 25%                |
| Low  | < 5%                   |

Each of the categories would be assigned a multiplier. The optimal multipliers are as follows:

|      |     |
|------|-----|
| High | x25 |
| Med  | x5  |
| Low  | x1  |

The final share percentage for each industry would be calculated using the following formula:

$$\text{Industry percentage} = \frac{\text{impact multiplier} \times \text{industry value}}{\text{Sum for all industries of multiplier} \times \text{industry value}}$$

$$P = \frac{M_i V_i}{\sum_{n=1}^t M_i V_i}$$

Where  
 i = industry number  
 n = number of industries affected  
 t = total number of industries affected  
 P= industry percentage  
 M = impact multiplier  
 V= industry value based on 3 year rolling average

Worked example:

Three industries are affected by the incursion of an organism. The benefits of avoiding the impact of the organism to each industry are as follows:

|            | Benefits (\$)           | Industry Value | Multiplier | % share | Compare to % using midpoint |
|------------|-------------------------|----------------|------------|---------|-----------------------------|
| Industry 1 | 100 – 120 million       | 1.2 billion    | 5          | 82.8    | 79%                         |
| Industry 2 | 10 million – 12 million | 20 million     | 25         | 6.9     | 7.9%                        |
| Industry 3 | 17 - 19 million         | 30 million     | 25         | 10.3    | 12.9%                       |

## DISCUSSION

As with any system that assigns broad categories rather than point-wise numbers there will be distortions in the percentage compared with what would have been assigned if the pure numbers were used.

A robust well recognised measurement of industry value based on government generated statistics will need to be determined. Work is underway to determine where these values are best sourced from.