Disproportionate Burden

Based on a Workshop Convened in Honolulu, Hawaii, September 18-20, 2014, by the Western Pacific Fishery Management Council

DB Workshop Objectives:

Define

Measure

Mitigation Alternatives

Symbols Used

- C_i is the added cost borne by a single CCM from implementation of a CMM

- $\sum_i C_i$ is the sum of added costs borne by all CCMs from implementation of a CMM

- S_i^* is a CCM's fair percentage share of the sum of added costs borne by all CCMs

Proportionate Burden exists if:

$$C_i = S_i^* \left(\sum_i C_i \right)$$

A CCM's cost	=	Its fair % share	X	Total cost to all CCMs
(10)	=	(.01)	X	(1000)

Disproportionate Burden exists if:

$$C_i > S_i^* \left(\sum_i C_i \right)$$

A CCM's cost	>	Its fair % share	X	Total cost to all CCMs
(30)	>	(.01)	X	(1000)

The Magnitude of a CCM's DB

Can be expressed as:

$$C_i - S_i^* \left(\sum_i C_i \right)$$

A CCM's cost	–	Its fair % share of total costs

What is a fair % share (S_i^*)??

- 1. "Beneficiary Pays Principle" – those who gain the most benefit should pay the most
- 2. "Means-based Principle" – those who have the most wealth should pay the most
- 3. "Polluter Pays Principle" – those who are most responsible for causing the harm to the resource should pay the most
- 4. "Flat Rate Principle" – all members of he group should pay the same portion

What is a fair % share (S_i^*)?

"Beneficiary Pays Principle"

$$S_i^* = \frac{B_i}{\sum_i B_i}$$

5% = 5 ÷ 100

B_i is a measure of gross benefit(s) accruing to a CCM as a result of the implementation of a CMM

What is a fair % share (S_i^*)?

"Means Based Principle"

$$S_i^* = \frac{W_i}{\sum_i W_i}$$

10% = 20 ÷ 200

W_i is the measure of a CCM's national wealth

What is a fair % share (S_i^*)?

"Polluter Pays Principle"

$$S_i^* = \frac{H_i}{\sum_i H_i}$$

1% = 1 ÷ 100

H_i is a measure of harm to conservation goals caused by a CCM

What is a fair % share (S_i^*)?

"Flat Rate Principle"

$$S_i^* = \frac{1}{N}$$

3.3% = 1 ÷ 30

N is the total number of CCMs and Territories in WCPFC

What is a fair % share (S_i^*)?

"Consensus Minimum Threshold"

$$S_{i-min}^*$$

A minimum fair % share (determined by he Commission) to be borne by a CCM

If $C_i > S_i^*(\sum_i C_i)$ then DB exists

S_i^* can be determined through principles applied individually or in weighted combination

$$S_i^* = f\left(\frac{B_i}{\sum B_i}, \frac{W_i}{\sum W_i}, \frac{H_i}{\sum H_i}, \frac{1}{N}, S_{i-min}^*\right)$$

relative benefit, relative wealth, relative harm, flat rate equal share, consensus threshold minimum

Considerations Regarding Measurement of C_i

- C_i should be measured in monetary units that reflect inflation free (real) values
- C_i are incurred by governments (CCMs) not commercial entities; however, the process of measuring C_i may require consideration of commercial entities and consumers
- C_i should be measured from a baseline (counter-factual) that specifies cost and benefit levels expected without implementation of the CMM

Considerations Regarding Measurement of C_i (cont.)

- C_i are subject to Commission discretion, but may under certain conditions include primary and secondary multiplier impacts
- C_i calculation may require shadow price estimates in situations where market prices are distorted and/or nonexistent
- C_i change over time, thus requiring annual update and use of expected net present value

Considerations Regarding Measurement of C_i (cont.)

- C_i measurement involves expected future estimation that is subject to variation and uncertainty
- C_i calculation may be aided by use of a population dynamic, bio-economic model that incorporates measures of statistical uncertainty and is informed by observed fishery and socio-economic data
- C_i measurement should employ internationally accepted best practices for computing costs and benefits

Further Concerns

Avoiding DB in the first place by CMM design

- Involves subjective judgments as to fairness
- Requires consensus and compromise that may cause inefficiencies, higher costs and lower revenue to all
- May provide benefit to parties with negotiating advantage

Offsetting DB with mitigation – cash, in-kind, regulatory exemption

- Requires precise, costly modeling and analysis
- Involves administrative, information, and transaction costs
- May distort incentives in ways that distract from conservation goals

Further Concerns (cont.)

<u>Calculation of DB using internationally accepted best practices</u>

- is costly and time consuming
- should be reserved for only the most important management measures

A Suggested Way Forward

Develop a formal WCPFC process that:

- Defines and assesses DB
- Assigns responsibility for demonstrating DB
- Provides evidentiary standards, both quantitative and qualitative
- Sets analytical priorities
- Offers dispute settlement
- Involves independent experts and peer review
- Uses best available science
- Involves transparency and stakeholder engagement