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:

\[ C_i = S_i^* \left( \sum_i C_i \right) \]

\[ \text{A CCM’s cost} = \text{its fair % share to all CCMs} \]

\[ (10) = (.01) \times (1000) \]
Disproportionate Burden exists if:

\[ C_i > S_i^* \left( \sum_i C_i \right) \]

A               Its                 Total cost
CCM’s > fair % X to all cost share 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 Its fair %
CCM’s – share of cost 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 the 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% = $5 \div 100$

$B_i$ 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 \div 200

\(W_i\) is the measure of a CCM’s national wealth
What is a fair % share \((\text{S}_i^\ast)\)?

“Polluter Pays Principle”

\[
\text{S}_i^\ast = \frac{H_i}{\sum_i H_i}
\]

1\% = 1 \div 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”

$S_i^*_{\text{min}}$

A minimum fair % share (determined by the Commission) to be borne by a CCM
If $C_i > S_i^* \left( \sum_i C_i \right)$ 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.)

Calculation of DB using internationally accepted best practices

– 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