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"Advances in Ecosystem-based Fisheries Management"

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Steps to unlocking EBFM: Displaying the N Dimensional Potato.

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Administrators will also get Input from Stakeholders on EBFM

These inputs will be wide ranging and contradictory,

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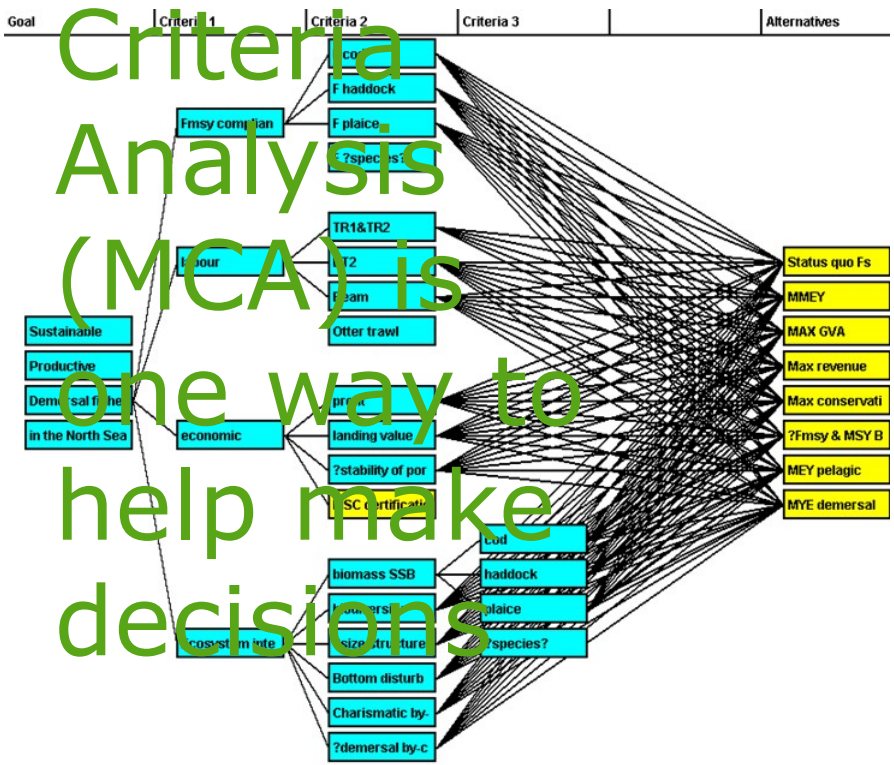
By 1)developing a value tree
2) getting agreed weigh
Then the Agreed Weigh
specified Scenario

Multiple Criteria Analysis (MCA) is one way to help make decisions



BUT this requires consensus by Stakeholders. Or it must be decided by higher level decision makers

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North Sea: Experience of MCA.

- **HAS** diverse fisheries and conservation concerns.
- **HAS** numerous diverse stakeholders.
- **THESE** are represented by NSAC and PelAC.
- **OUR** Stakeholders agreed a decision tree.
- **BUT** They could not agree what weight to put on its various branches!
- **HENCE MCA** is for Higher Level Decision Makers
- **BUT THEY** need to know Stakeholders Views

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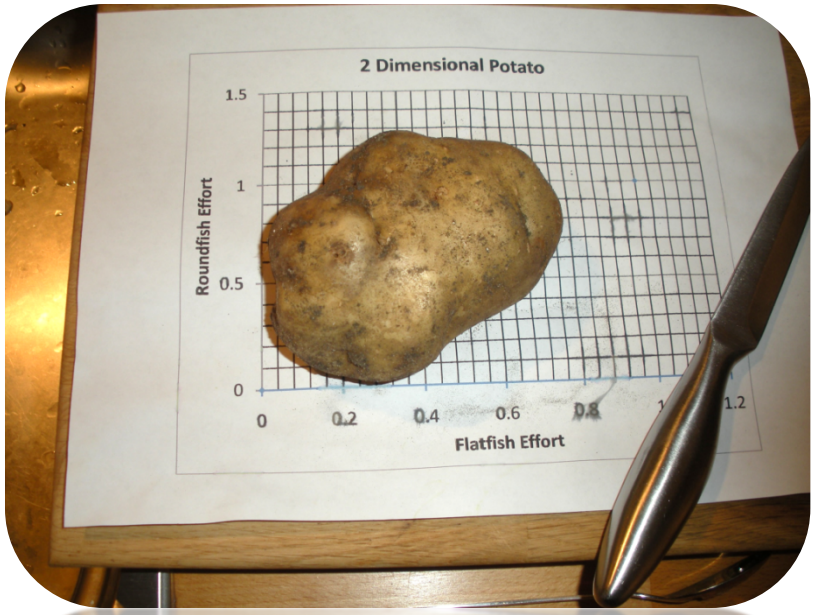
An alternative approach is to arrive at an agreed solutions by minimum whinge or the N dimensional Potato!



The N dimensional potato represents all the tradeoffs (catches, profitability, biology ecosystem etc) from a multi-fleet multi-species system.

The idea is to cut away the rotten bits and be left with those solutions that everyone finds acceptable though not perfect

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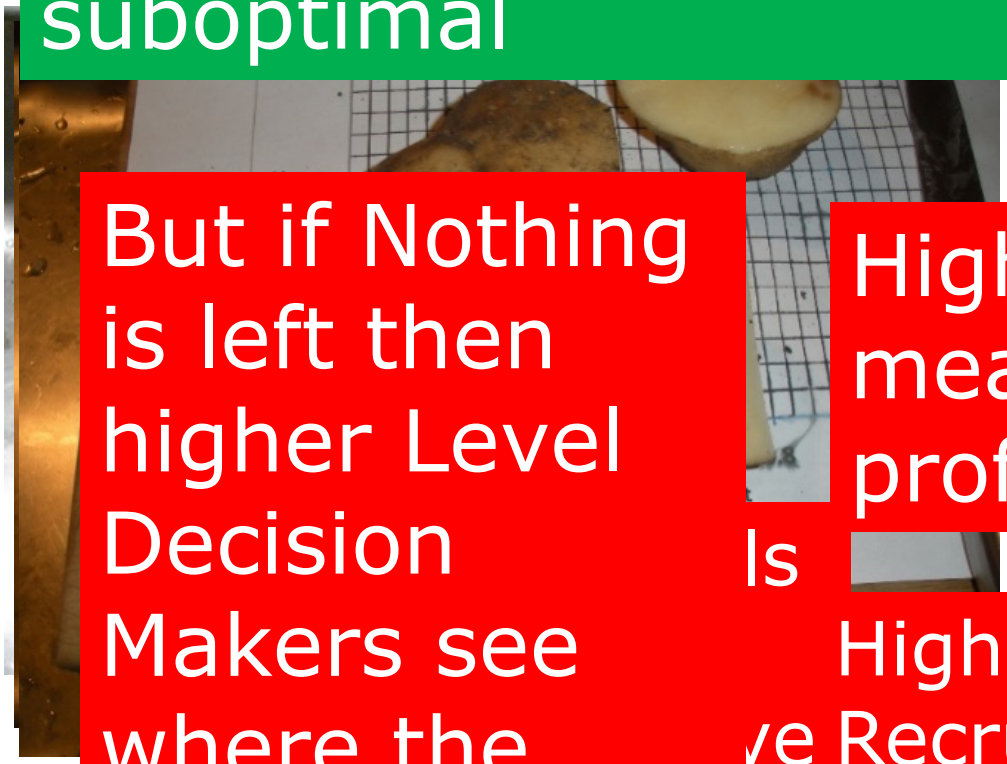
What is left with the bad bits removed is OK for everyone. Though mostly suboptimal



But if Nothing is left then higher Level Decision Makers see where the Problems are!

High effort means low profitability!

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High effort = Recruitment Risk!

jobs!

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To make this approach operational requires us to:

1. **Discover** all stakeholders' views of what are the rotten bits.

2. **Inform** Senior Managers if there are solutions that all stakeholder agree are OK .

3. **OR Indicate** who they will offend (and how much) with a preferred solution.

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At the April NSAC DWG we asked members Which 3 of the following 9 factors mattered most

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1. Maintain Fishers Jobs
2. Maintain Processors Jobs
3. Achieve Profitable Fisheries
4. Reduce Impacts on the Environment
5. Maintain Stability of Catch Opportunities
6. Adherence to Current CFP
7. Achieve/Retain MSC Certification
8. Avoid Unfairness
9. Other

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- Nearly everyone responded
- 13 gave numbers and 3 others gave useful comments.
- Numerical Answers split into three clear groups of Stakeholders.
- These were those Stakeholders concerned with maintaining :-

1. Fishermens Jobs
2. Stability and Profit
3. The Current CFP and the Environment

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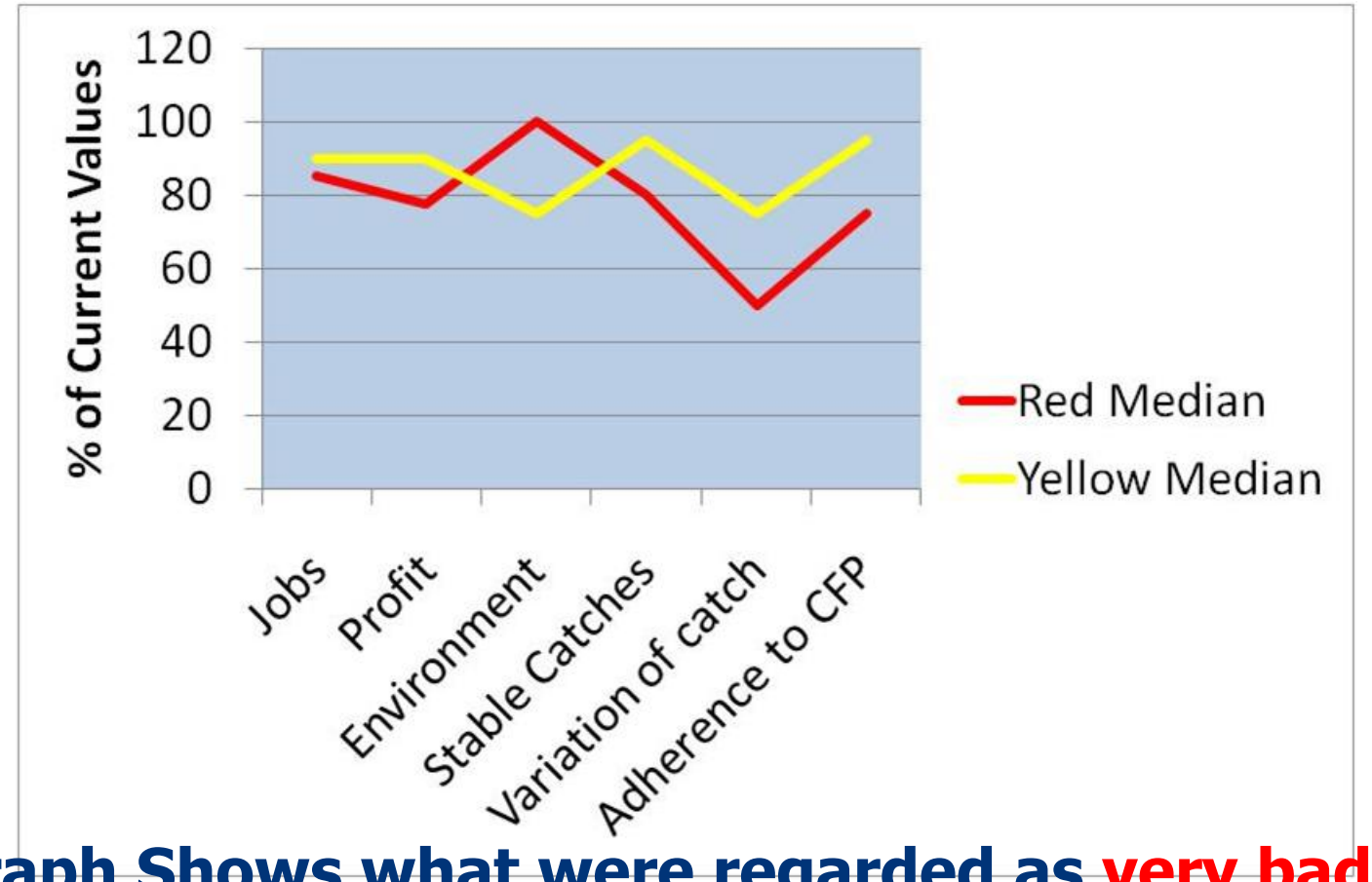
We also asked them to state BAD levels



Graph Shows what were regarded as very bad and bad levels typically expressed as % of Current Levels.

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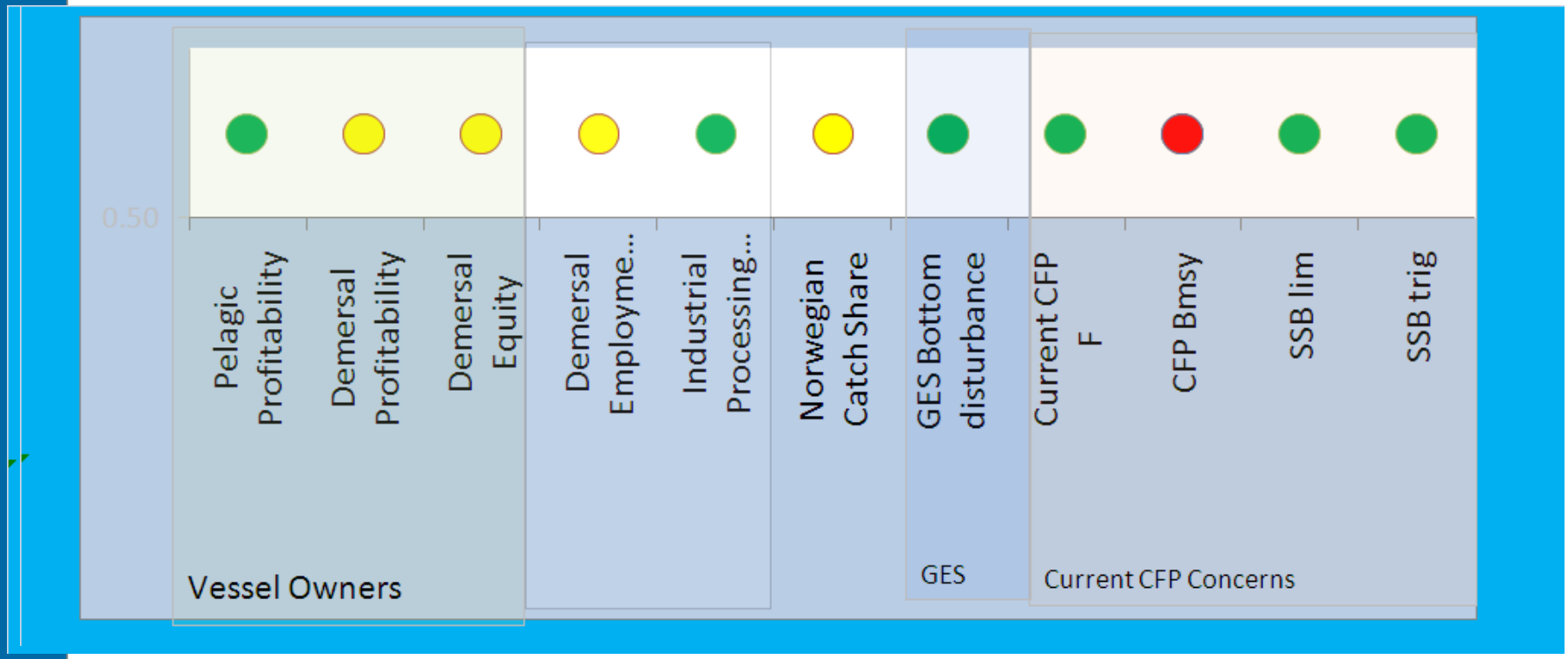
The T-ONS Model uses traffic lights to display such results –
These have to be recalibrated in the light of this and any follow up survey.



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Conclusions

- The N Dimensional Potato offers a way forward.
- Our survey results are preliminary. But shows clear groupings and give useful patterns.
- It seems there are 3 distinct stakeholder groups with different aims
- Presently there does not seem common ground between groups for compromise at NSAC level
- T-ONS Provides a good way to display Stakeholder Concerns

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Acknowledgements

- Thanks to the EU for funding MAREFRAME
- Thanks to Michael for providing the N Dimensional Potato name.
- Thanks to NSAC and Pel AC for all their help.

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- **The BEST Legacy of MAREFFRAME**
- **Will be to help Stakeholders and Managers become**

TAKEHOLDERS

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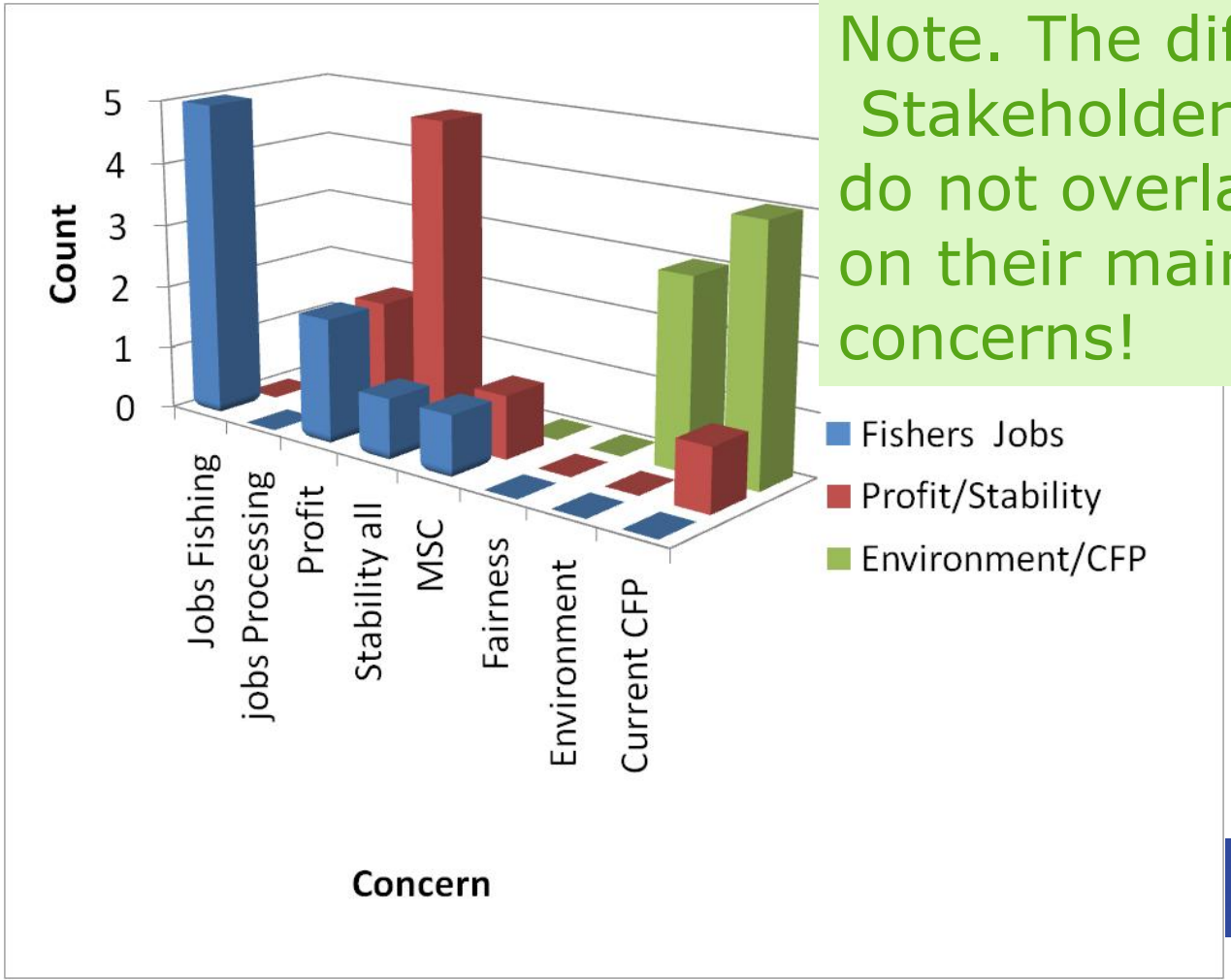
. Count of the times a criteria was recorded as being the first or second concern by the three sub groups.



Note. The different Stakeholder Groups do not overlap much on their main concerns!

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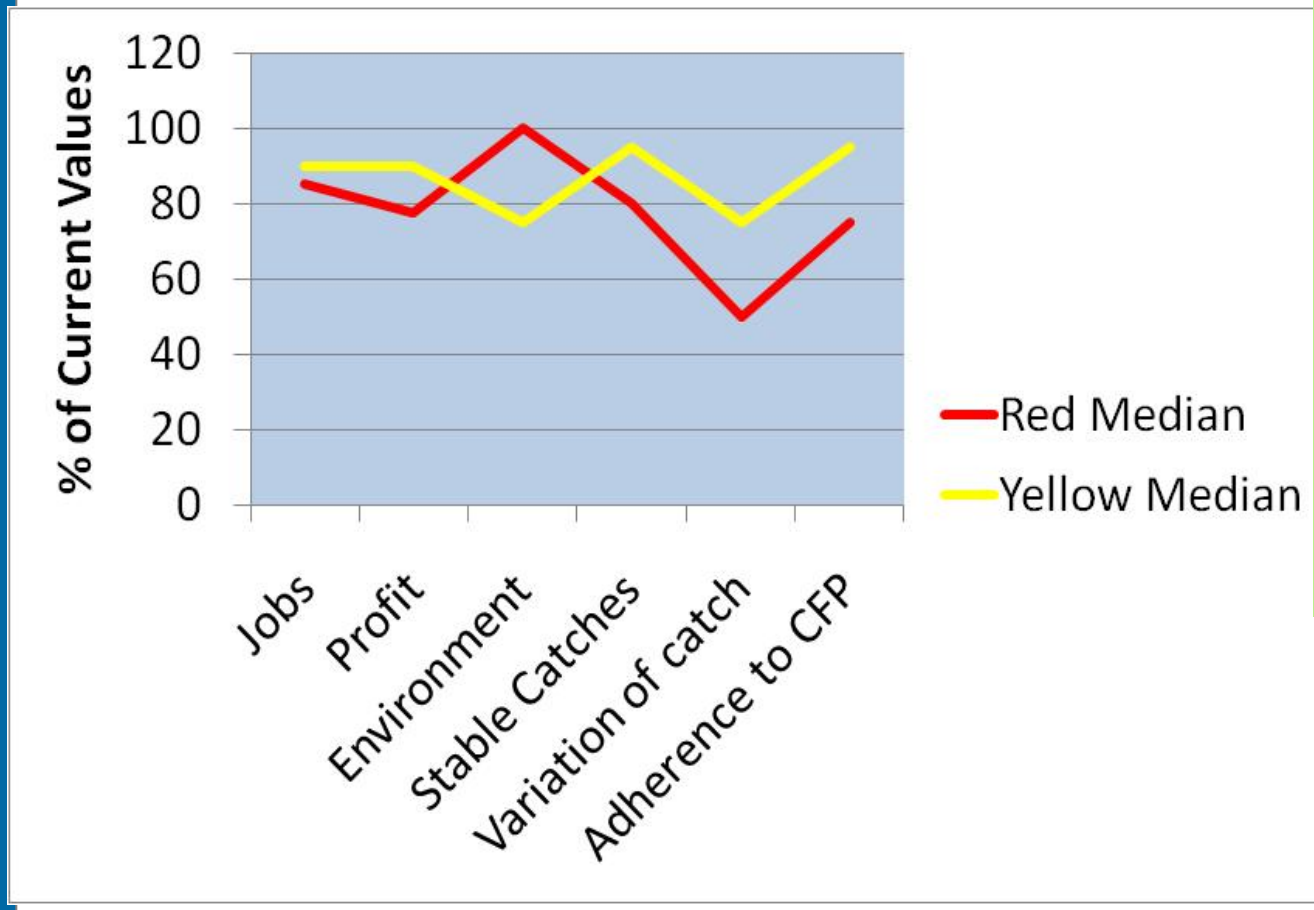
Graph Shows what were regarded as very bad and bad levels typically expressed as % of Current Levels.



Note. For the environment Impacts Low is good- high is bad.
For all other Concerns Low is Bad

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At the April DWG many of you answered John's questionnaire to say

1:-Which 3 factors mattered most to you

2:- What would be bad levels of these factors

What 3 Concerns of Fisheries Management are Most Important to You

Vote 1 for 1st Choice, 2 for 2nd Choice 3 for your 3rd Choice.

1) Maintaining Jobs for Fishermen. Score

2) Maintaining Jobs in the Fish processing Industry Score

3) Achieving Highly Profitable Fisheries. Score

4) Reducing impacts on the wider Environment. Score

5) Maintaining Stability of Catch opportunities for all groups Score

6) Adherence to current CFP Score

7) Achieve/Retain MSC certification. Score

8) Avoid Unfairness. Score

9) Other ? Score

1. 1) Other2. ? Score

For Your 3 Most important Concerns say what would be a Rotten Outcome

Where possible give bad outcomes in absolute terms e.g. Profitability less than 5% or 5 stocks under Blim.

When this is not easy relate your answer to the current situation.

e.g Employment less than 50% of current levels

Concern	Rotten Level	Unattractive Levels
1)		
2)		
3)		

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Some answers were on a different basis or non numerical. These were also interesting and helpful. Here are just a few from the paper.

Concern			
Fishers Jobs	Annual Job losses > 5%		
Achieve Profitable Fisheries	Building Resiliance (economic) is essential….	…profitability should be above 20% of revenue	
Reduce Impacts on the Wider Environment	Irreversible loss of species >2%	Maintaining the wider ecosystem is important…	….to society and business

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