

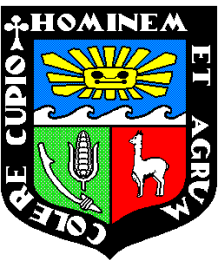


Scenarios for the future: Drivers of change in the Peruvian fisheries sector

Marie-Caroline Badjeck and Tania Mendo

April 26th 2010 Sendai, Japan

International Symposium “Climate Change Effects on Fish and Fisheries: Forecasting impacts, Assessing Ecosystem Responses, and Evaluating Management Strategies”

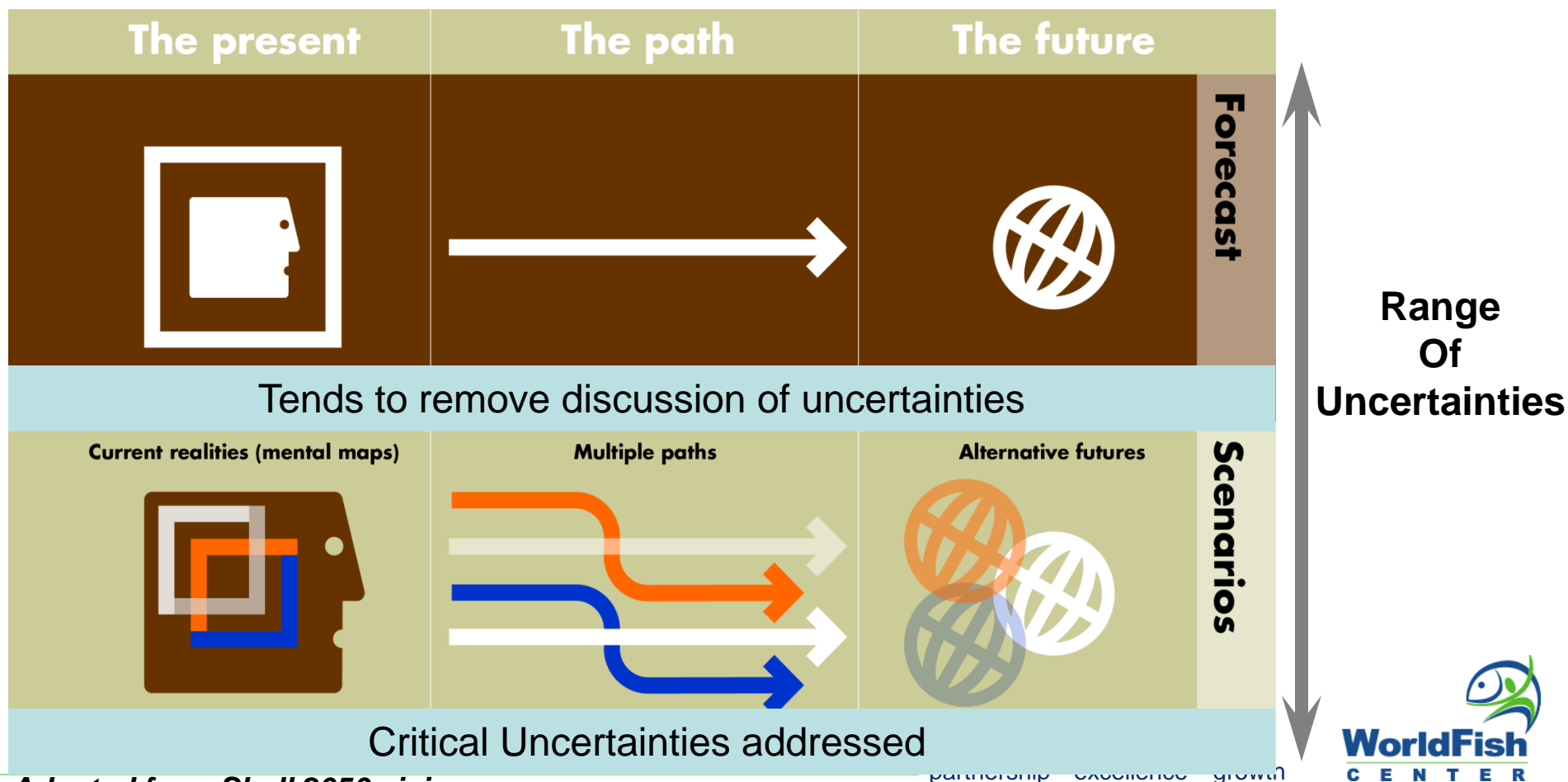


partnership • excellence • growth



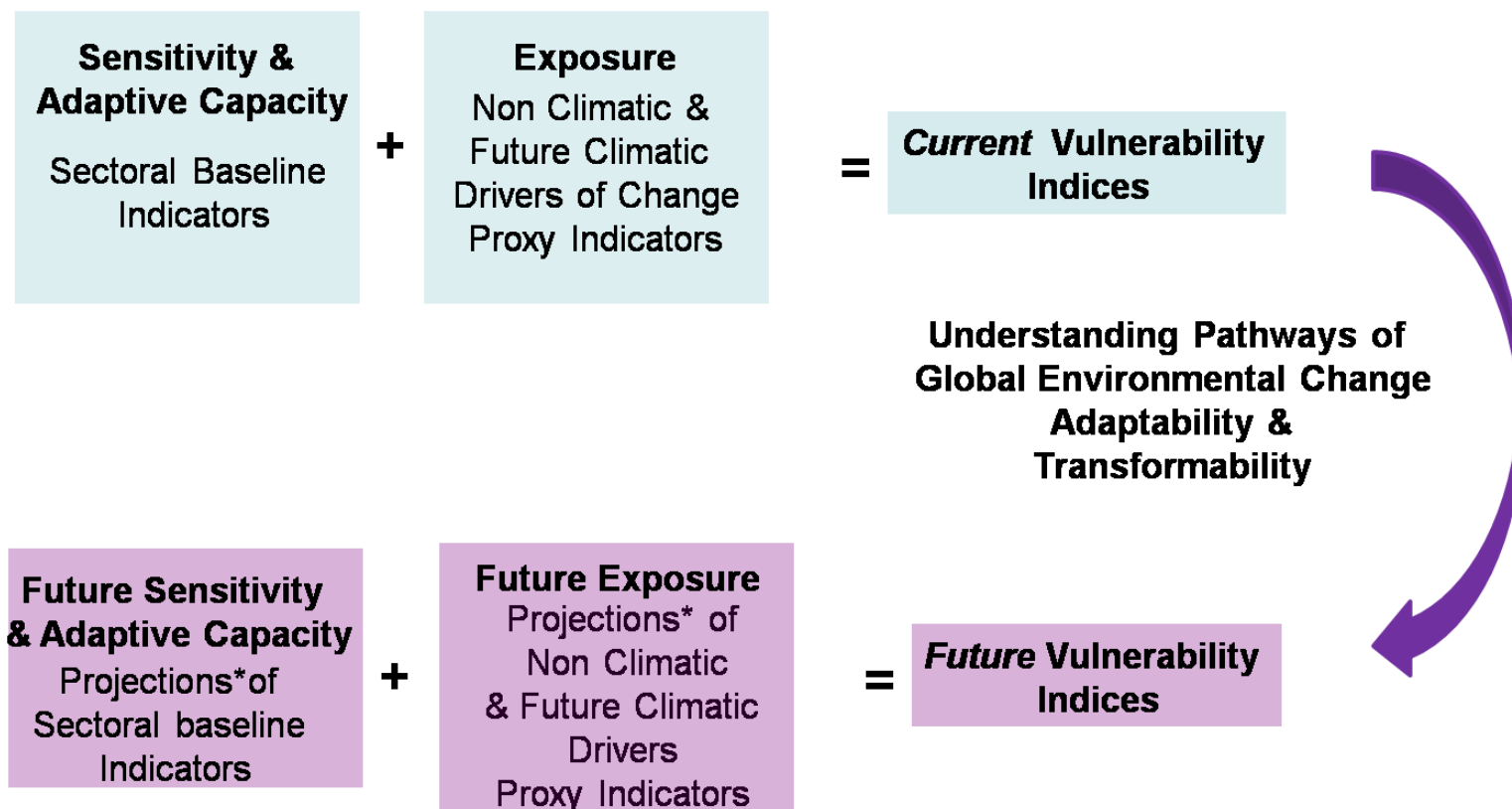
What are scenarios ?

- An internally consistent and plausible view of what the future might be
- Not a forecast nor prediction but range of possible futures



Why use scenarios?

- Static vulnerability assessment => “current vulnerability”
- Dynamic vulnerability and the multiple external drivers a system is/will be exposed to (Belliveau et al., 2006) => “future vulnerability”



Without Scenarios

With Scenarios for 2050

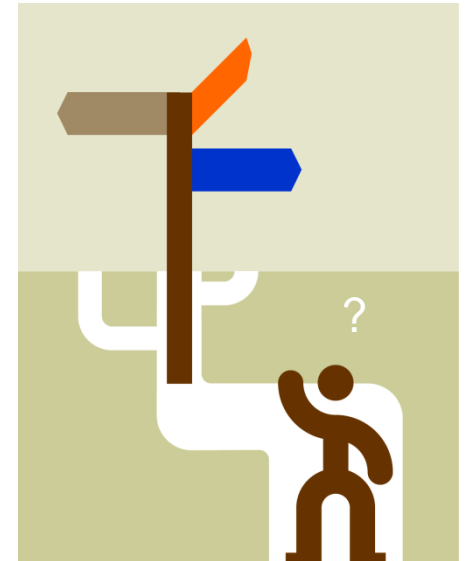
Barange et al Forthcoming

partnership • excellence • growth

Why use scenarios ?

- Useful when addressing the considerable uncertainty about future trajectories in complex systems
- Instruments of reflexivity and learning: “Thinking outside the box”
=> *“Futures thinking for shifting thinking”* (NZCER)
- To anticipate change so that plans are in place when they happen
- To design strategies
- The idea is to achieve “better” decision-making

Shell Vision 2050



Methods

- Expert elicitation to identify drivers of change in the past and in the next 40 years in the fisheries sector
- ‘any natural- or human-induced factor that directly or indirectly brings about change in fisheries and aquaculture production systems’ (see Hazell and Wood 2008)
- Stringent expert criteria (EPA), 38 surveys sent => 47% response rate
- Experts from:
 - Research institutions: 8
 - NGO's: 3
 - Industry: 2
 - International Organizations: 3
 - Government: 2
- Code book development

Methods

- Uncertainty: “inability to determine the true magnitude or form of variables or characteristics of a system” (Mahmoud et al, 2009)
- How certain are you that a driver will occur (start to have an impact) in 2050

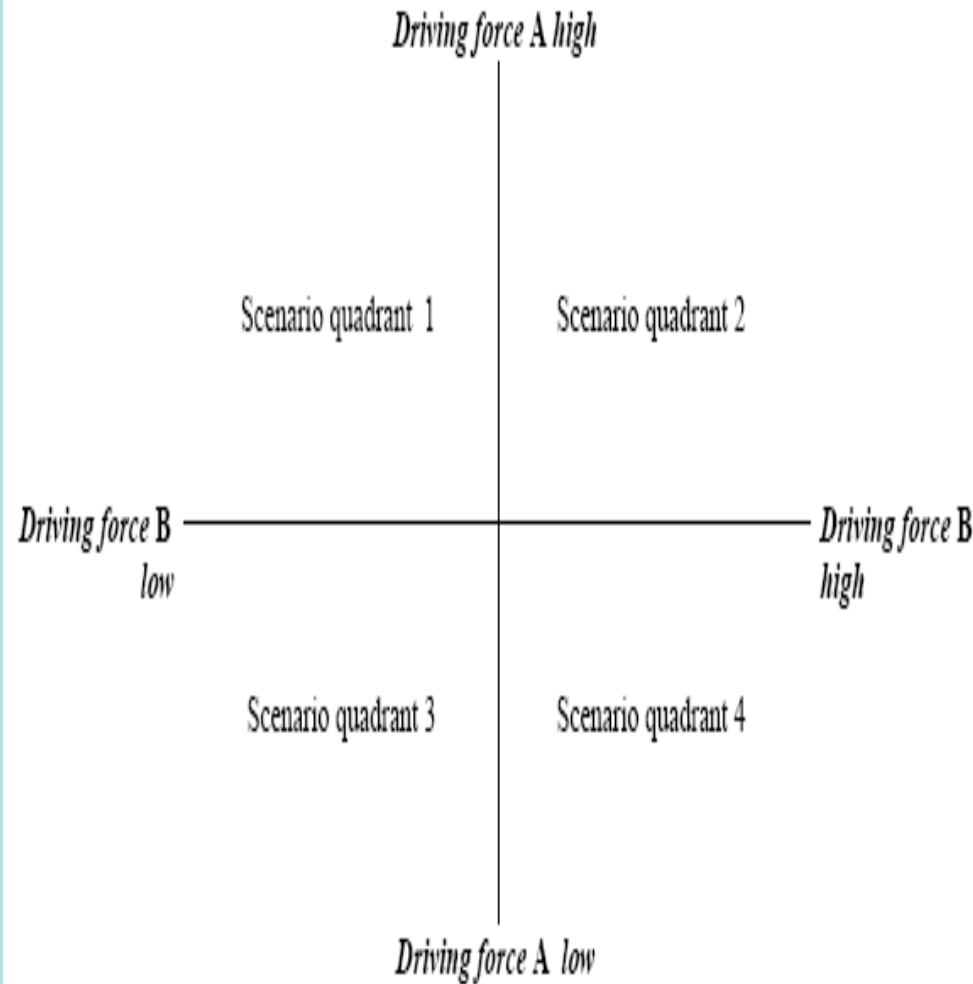
Impact-Uncertainty Classification

I m p a c t	High	Critical Planning Issues	Important Scenario Drivers	Critical Scenario Drivers
	Mod	Important Planning Issues	Important Planning Issues	Important Scenario Drivers
	Low	Monitor	Monitor	Monitor & re-assess
		Low	Moderate	High

Matrix from SAMI consulting

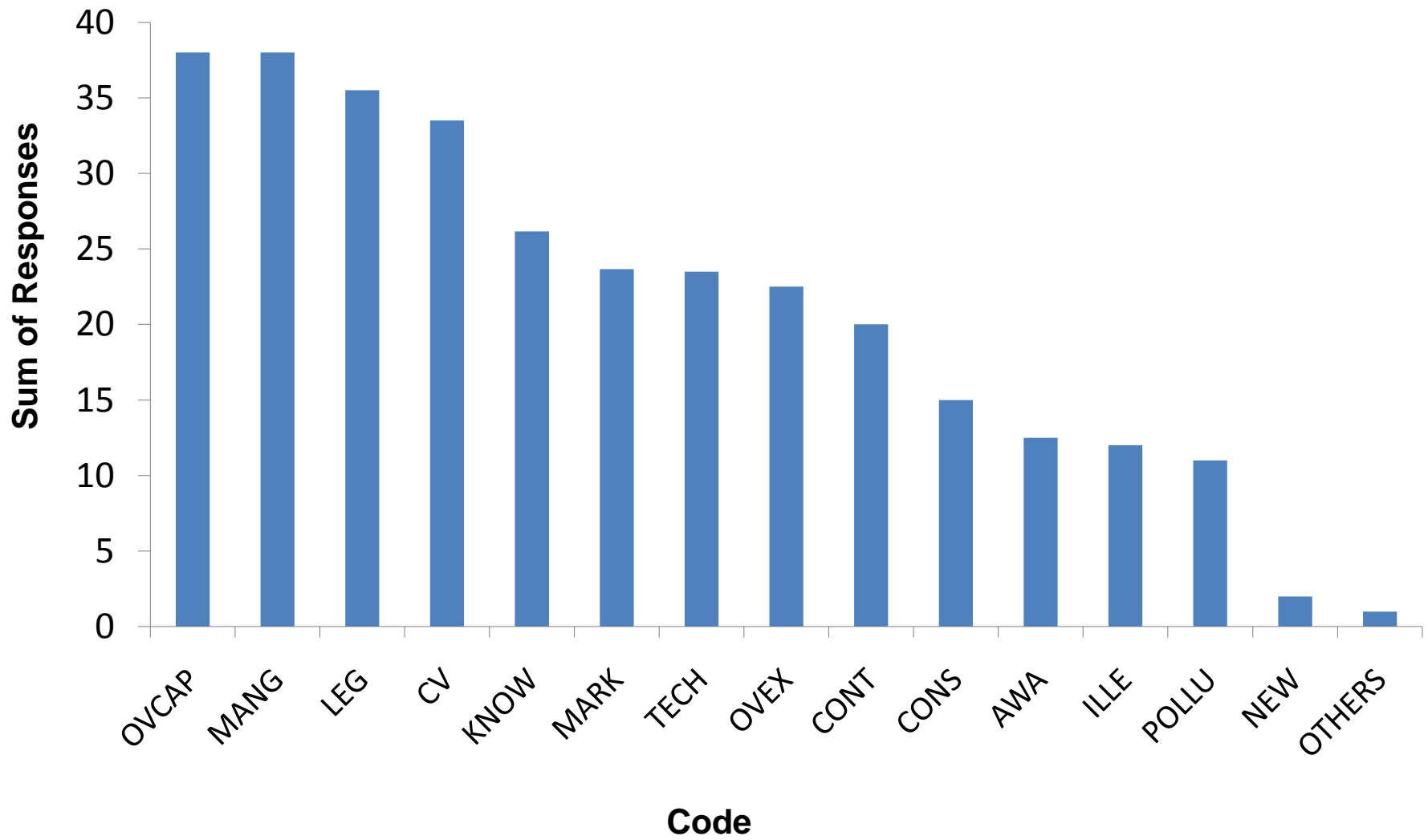
Methods

- *Modified* Delphi approach => consensus on drivers importance and level of uncertainty
- Workshop in Lima March 2010
- 2 critical drivers identified (high uncertainty and importance) to form the scenario cross
- How drivers identified behave in each scenario, narrative and trajectory for each driver => the storyline for 2050

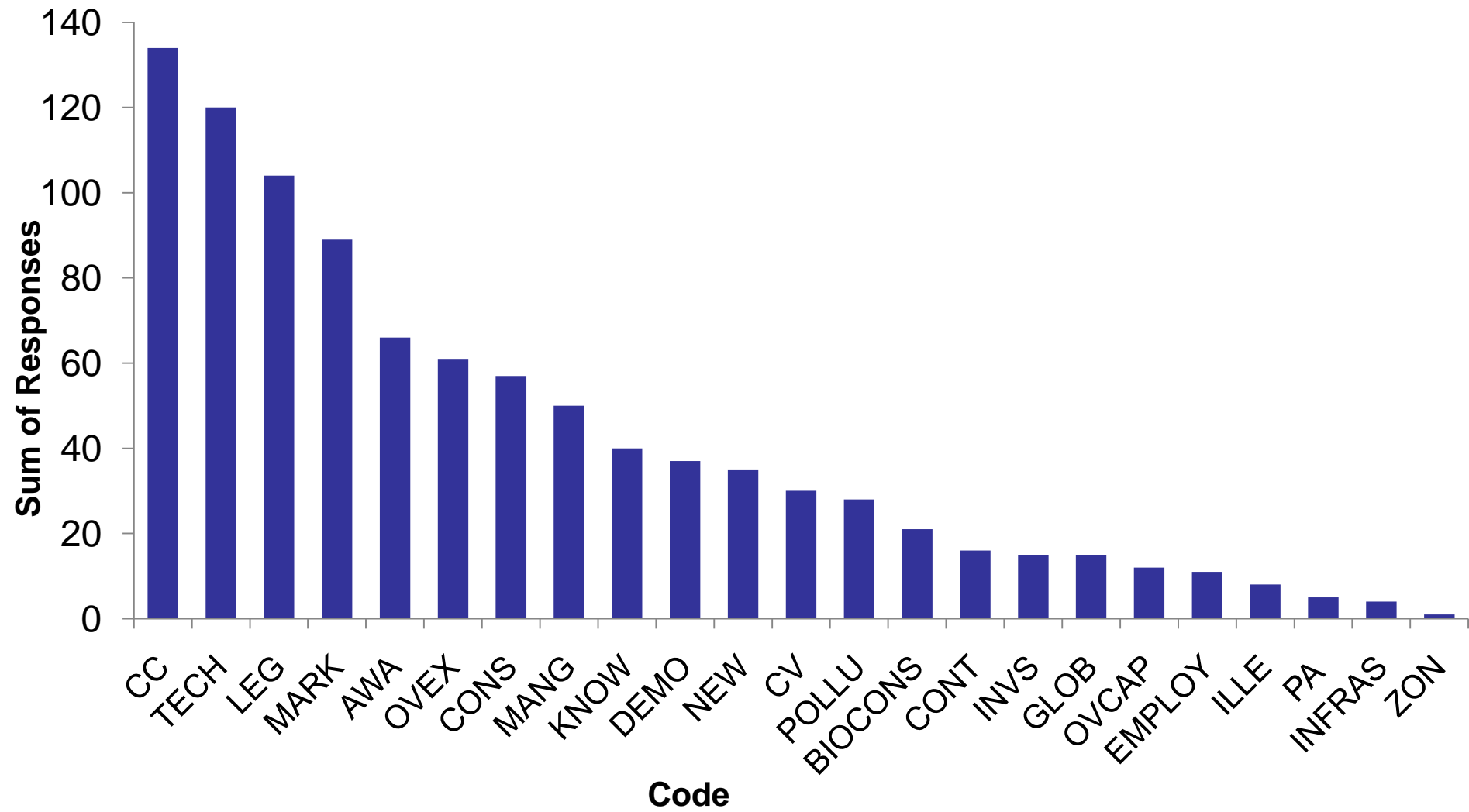


Results

Survey: Importance of Drivers in the last 30 years



Survey: Importance of drivers 2050



Drivers of Change in the past and the future

- Differences:

- Past: overcapacity, control and enforcement
- Future: *climate change, population growth*

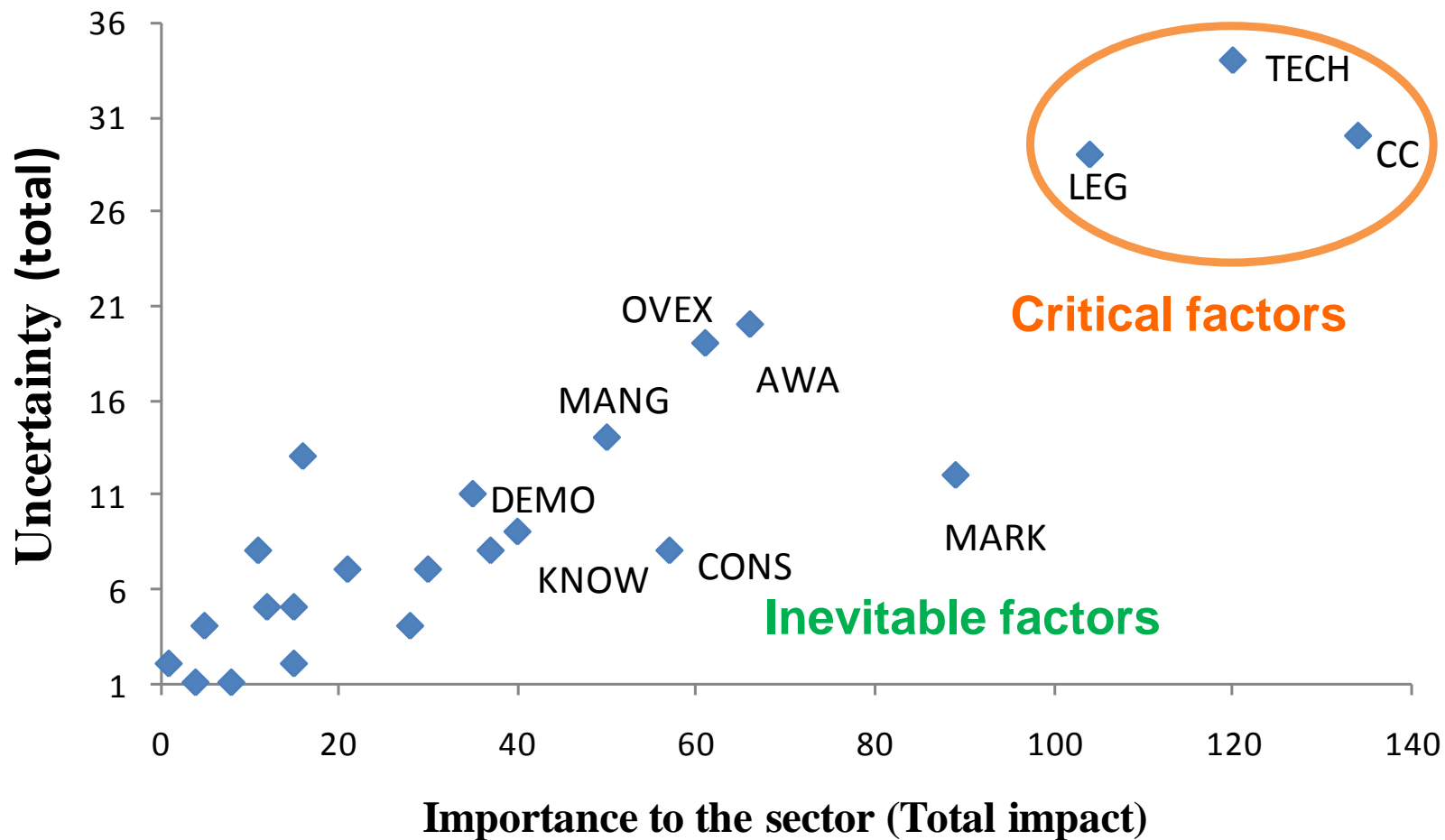
- Consumption, environmental awareness (behavioral change), climate variability => changed ranking

- Why?

- Progress in anchovy stock management (quotas, satellite surveillance)
- Greater understanding of ENSO and regime shifts
- Role of demand and behaviors are considered important => shift from production/supply focused management
- Climate Change gaining momentum in public/policy & scientific arena

Survey: Scenarios 2050

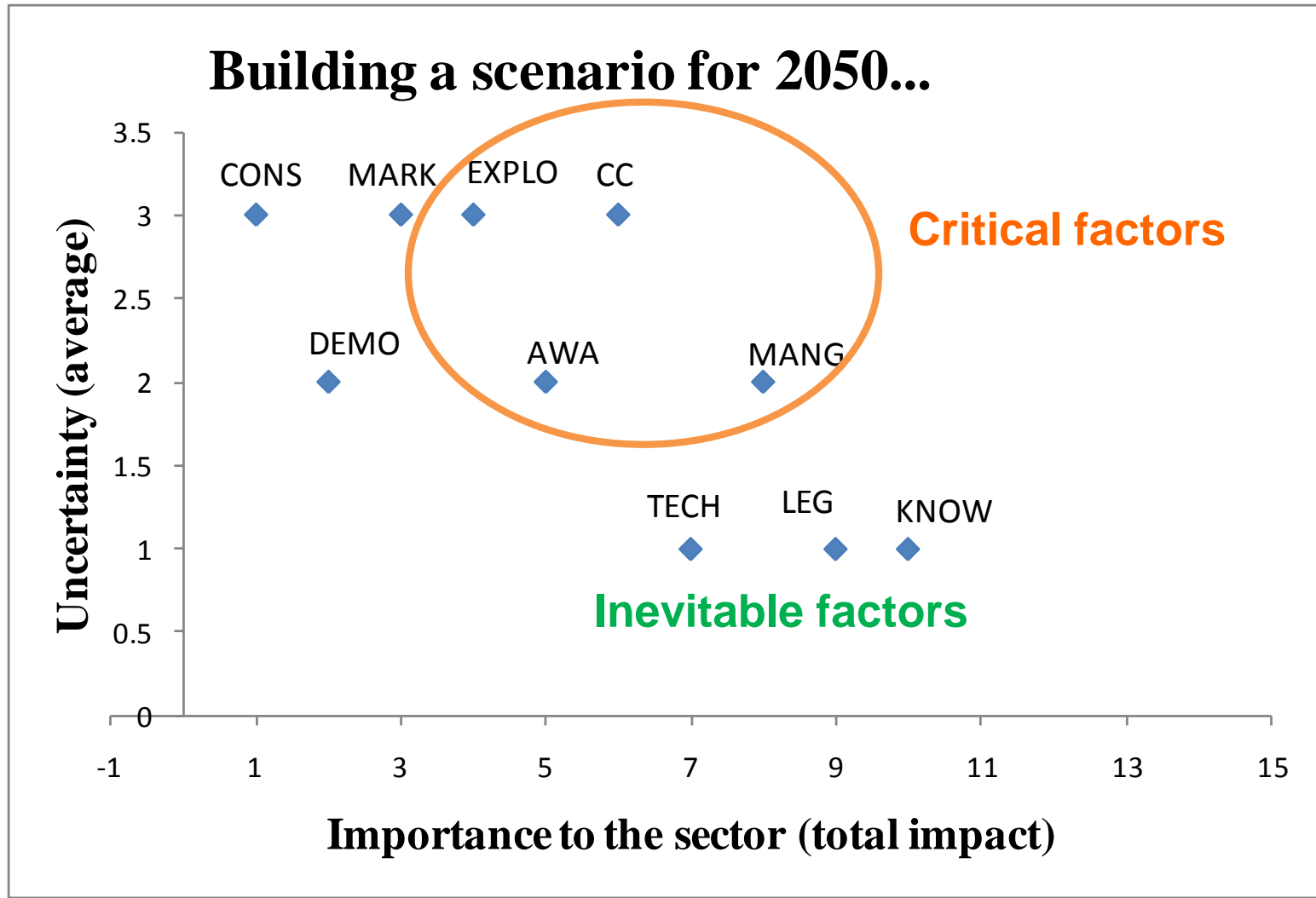
Building a scenario for 2050...



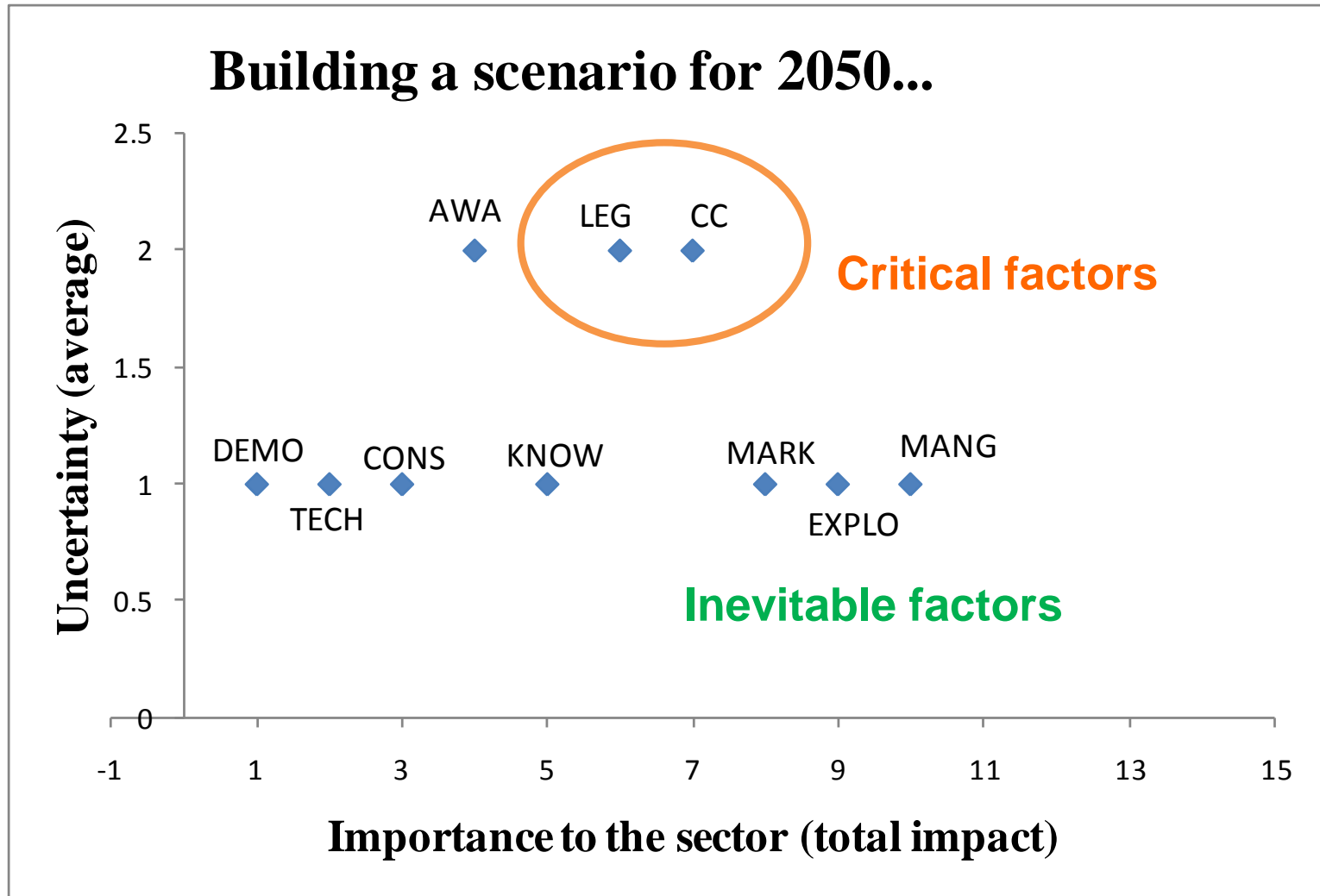
Workshop: Scenarios 2050



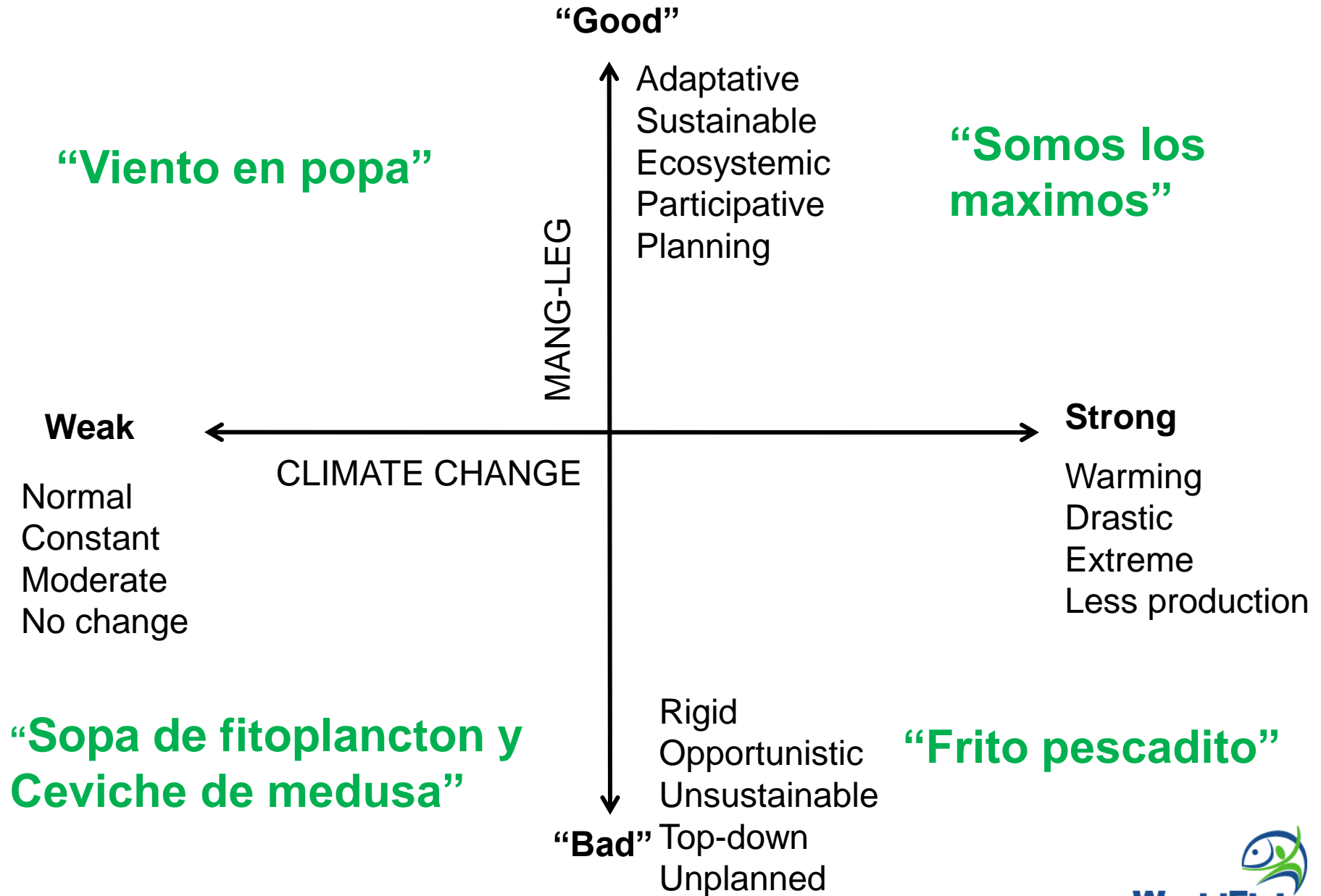
Workshop: Scenarios 2050 – Group 1



Workshop: Scenarios 2050 – Group 2



Workshop: Scenarios 2050 – Group Consensus



Scenario “Frito Pescadito”

- No investment in research, slow technological development and innovation that does not allow design and implementation of adaptation options
- Extreme events and floods => no aquaculture development
- Climate Change and extreme events impacting agriculture combined with population growth
 - ⇒ migration to coastal zones
 - ⇒ Malthusian overfishing
- Loss of competitiveness. Free Trade Agreements with main markets “do not save our exports, prices and production cannot be maintained”
- Local market underdeveloped
- “Winners”: actors with short-term behaviour



Preliminary messages

- Education:
 - Fisherfolk , industry and youth
 - Public sector => capacity building in conflict management
- Climate change effects could be important but management and legislation are the most important drivers
- Take into account population changes and migration
- “Change/Shift Visions”: from fisheries resources to marine ecosystem and ecosystem services
- Market and certification according to clean/sustainable technologies
- Importance of scientific research



Process or results?

- Strength:
 - methods for ***strategic planning***
 - ***uncertainty should not be a reason for inaction***
 - ***space for creative discussion***
 - => positive feedback from participants
- Weakness: expert bias, coding, short time (1 day), improved in West Africa case study
- Contrasting 'process' and 'output' approaches of 'science' and 'management' (Allison 2002)
- Way forward:
 - “conversation” with a wider audience
 - Link with vulnerability assessment



The Economist March 18th 2010

Acknowledgment

- QUEST_Fish project
- Additional support from GTZ/BMZ
- Dr. Patricia Gil Kodaka - Universidad Nacional Agraria La Molina Facultad de Pesqueria and Ing. Magaly Arrieta Vela
- Survey and Workshop Participants

E-Mail M.Badjeck@cgiar.org

