

# ADAPTING FISHERIES MANAGEMENT FOR PRO-ACTIVE, CLIMATE-READY DEPENDENT SOCIETIES AND ECONOMIES

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Rome, 18-21 November 2019

Session 6  
Panel 6.2

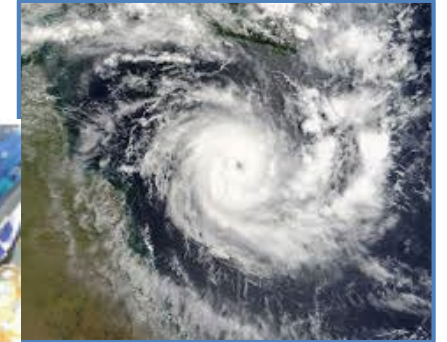
International Symposium on Fisheries Sustainability:  
*Strengthening the Policy-Science Nexus*



# ADAPTATION STRATEGIES FOR SOCIETIES: WHY?

- **Crisis:** decreasing stocks, range shifts, climate extremes and heatwaves
- **Unprepared:** step change in proactive interventions needed
- **Static** management reference points are failing
- Changing baselines, assemblages and increasing variability so need **dynamic** adaptive approaches

## CLIMATE EXTREMES



## CHANGING CATCH

Ryan Formanek

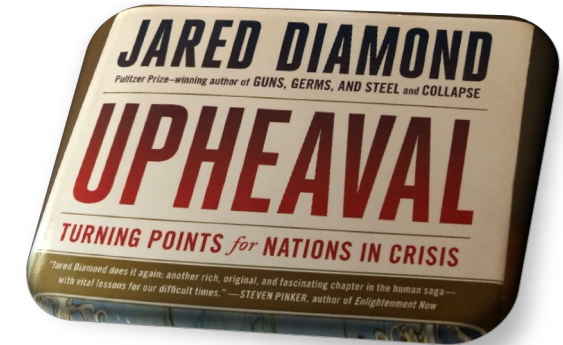


## SOCIAL LICENSE

Prioritise and stage actions and identify opportunities and bottlenecks

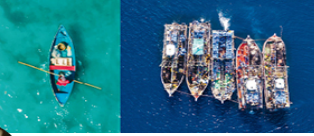


Extracts: Prof. Jared Diamond (2019)  
*Upheaval: Turning Points for Nations in Crises*



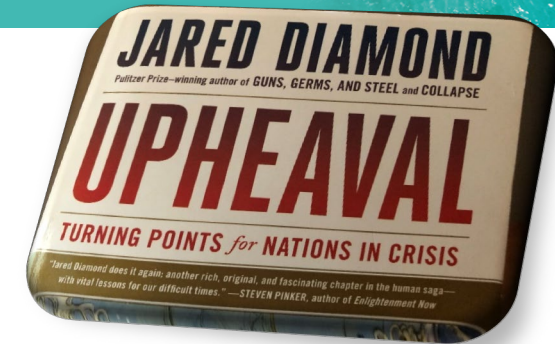
- 1. Acknowledgment that one is in a crisis:** fisheries, food security, climate change
- 2. Accept responsibility:** diverse groups differ in views
- 3. Building a fence/selective change:** selectively change specific policies
- 4. Help from others:** sharing advisors, economic help
- 5. Learn from other successful models:** best solutions and models used elsewhere
- 6. National identity:** shared pride [eg shared pride of a fishing nation /community or certification/branding/commitment to sustainability]

## LESSONS FROM HISTORY ON HOW NATIONS DEAL WITH CRISES (2/2)



Extract: Prof. Jared Diamond (2019)

*Upheaval: Turning Points for Nations in Crises* continued...



7. **Honest self-appraisal:** need accurate knowledge and honest evaluation
8. **Historical experience:** past history of successful coping builds self-confidence
9. **Patience with failure:** no quick solutions - patience in negotiating between groups with divergent interests
10. **Situation-specific flexibility:** consider new approaches to a problem
11. **Core values:** strength or negative under changed circumstances
12. **Freedom from geopolitical constraints:** some countries / fisheries luckier than others [climate change isn't fair!]



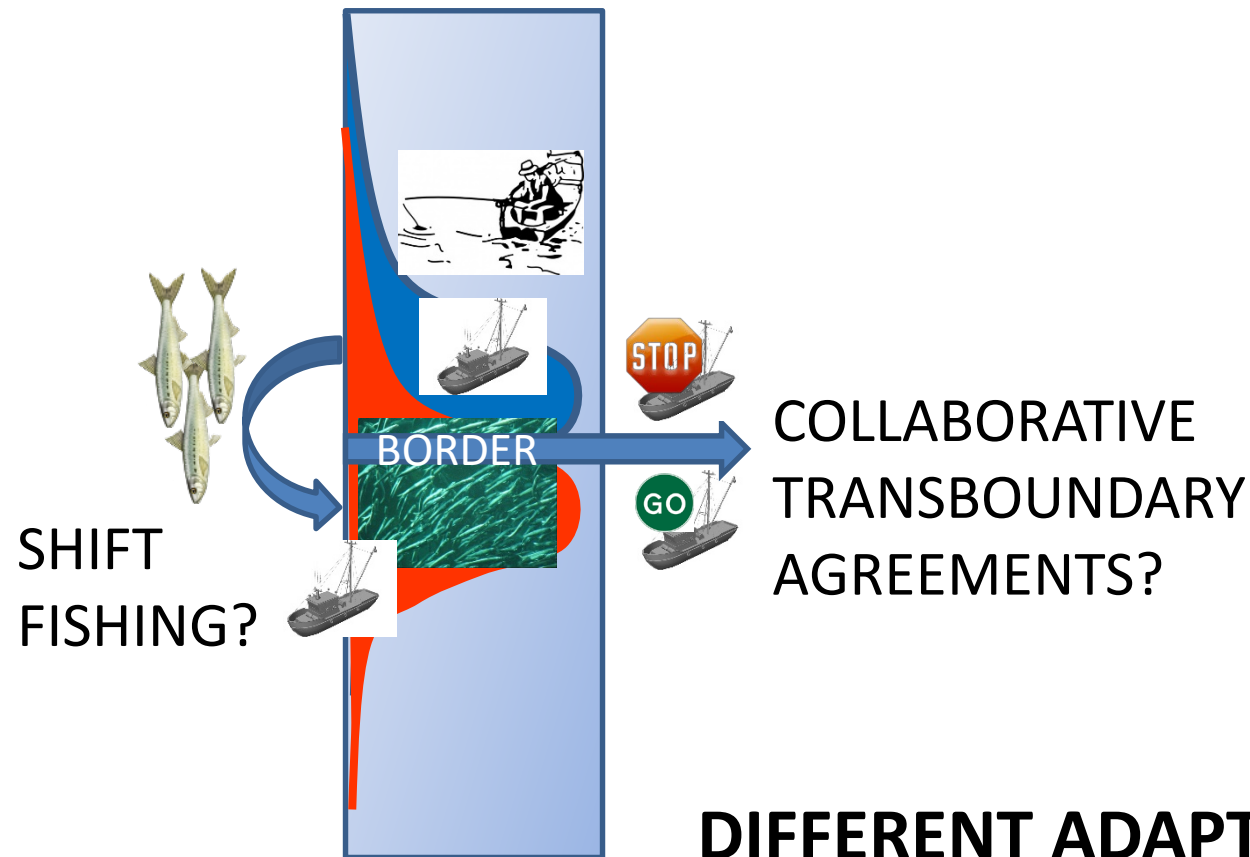
# EXTREME ADAPTATION STRATEGIES

- Should responses to changing catch composition be flexible?
  - Management, legislation, monitoring challenges
- How will fishing practices and technologies adjust to changes in where to fish and what to catch?
  - Economics an important driver
- How to expand diet preferences and markets?



Need strategies to dampen highs and lows affecting livelihoods, logistics and economies

# ADAPTATION STRATEGIES: DISTRIBUTION & SPECIES COMPOSITION



CHANGE TARGET  
SPECIES, GEAR,  
LEGISLATION?



New species  
assemblage

Pre-climate  
change  
assemblage

## DIFFERENT ADAPTIVE CAPACITIES

Shift fishing locations,  
monitoring & technology to  
find fish

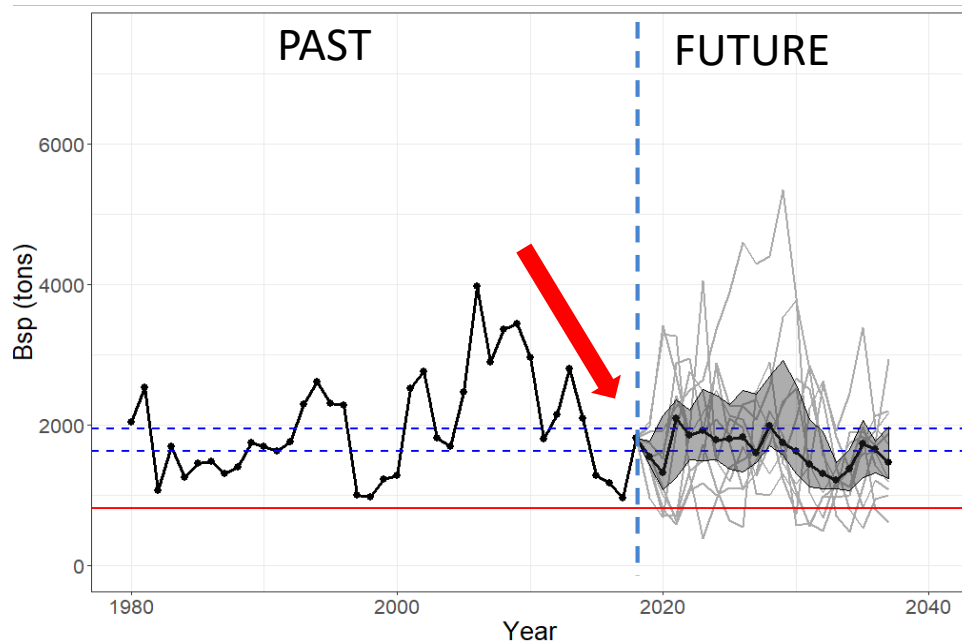


vs



Flexible catch methods,  
less rigid market  
institutions

# ADAPTATION STRATEGIES: VARIABILITY



- Robust management strategies to reduce risks
- Precautionary approaches
- Plan for extremes
- Forecasts to help plan and target fishing
- Adapt timing of fishing season
- Flexible regulations

Managing variability not stability is the key to adaptation



# FLEXIBLE ADAPTATION & NEW APPROACHES

## Capture



Adapt methods to deal with warmer water, tides

## Holding & Transport



Are storage & transport routes resilient?

**Need innovative  
new strategies**

## Diet Preferences & Markets



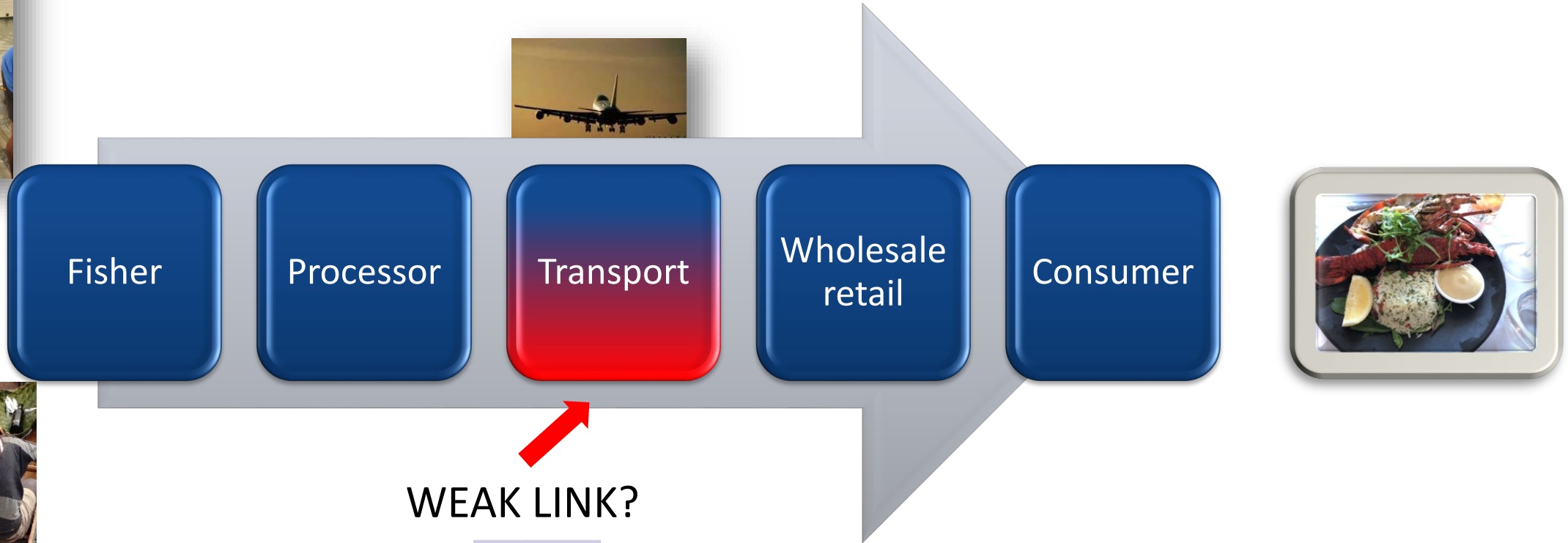
Fish have vital contribution to global food and nutrition security BUT we need to adapt dietary preferences

Refs e.g. Hicks *et al.* (2019) *Nature*



# RESILIENCE OF THE SUPPLY CHAIN

Shocks affect supply chain, food security, social outcomes  
Human rights due diligence a new concept



RESILIENCE



Increasing resilience to climate change  
might involve diversifying the network

# MULTISCALE APPROACHES

## LOCAL



Lifestyle & livelihood



## REGIONAL



## NATIONAL / INTERNATIONAL



International markets, price volatilities, trade: affect demand, food security

Competition between sectors

**Need:** Global Production Ecosystem resilience

- Decoupled mechanisms can cause global instability in long-term
- Enhance biological and social diversity to support adaptability

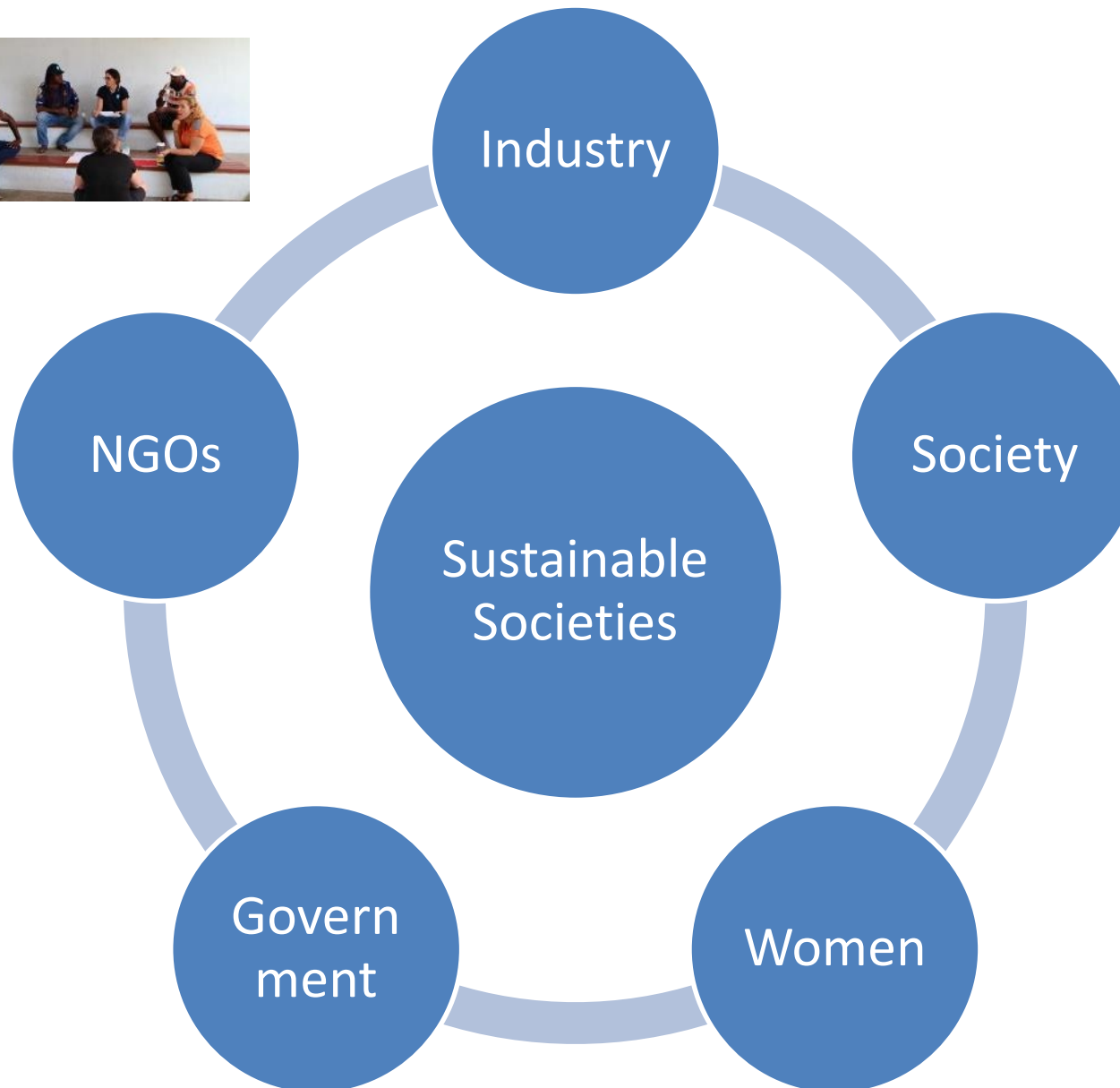


# ADVANTAGES OF COLLABORATION & INCLUSIVE APPROACHES



## WHY?

- Adaptable management
- Precautionary approaches
- Cooperative management of transboundary stocks
- More complex scientific reasoning underpinning adjustment of human activities



## HOW?

- Acknowledging Indigenous customary knowledge & management practices
- Multidisciplinary fisheries management groups
- Transparent adaptable harvest strategies with stakeholder input
- Principles of equity and inclusiveness

# PUTTING GENDER ON THE AGENDA

Women play positive roles in the food supply chain, in environmental awareness and enhancing community cohesion plus injecting much-needed conflict resolution skills

## *Drivers of women's empowerment*

- ✓ Strong female role models
- ✓ Men supporting professional development
- ✓ Organisational support





# REACTIVE vs PROACTIVE ADAPTATION

**Reactive:** respond to climate variability = “business as usual”



**vs**

**Proactive:** anticipating change = improving business, management and outcomes for dependent society

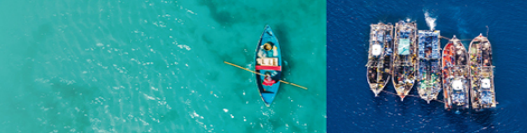
## Proactive Examples:

- Adaptive resilient harvest strategies
- Flexible regulations
- Seasonal forecasting
- Cross jurisdictional management

- Income diversification
- Market diversification
- Resilient supply chains
- Improved industry & management partnerships



# PROACTIVE ADAPTATION



- ✓ **Increasing variability:** flexible arrangements; ecological forecasting; market flexibility; diet diversification
- ✓ **Supply Chains:** strengthen resilience; collaborative arrangements
- ✓ **Transboundary stocks:** collaborative management
- ✓ **Buy-in:** good governance; stakeholder engagement; co-management & collaboration; transparency and trust
- ✓ **Marginalised groups:** close gender gap; involve indigenous stakeholders; community cohesion; conflict resolution
- ✓ **Multidisciplinary approaches:** consider human dimension
- ✓ **Multiple Scale Solutions:** local, regional, global



# Conclusion / THANK YOU

We're chasing a  
moving beast

.. time to change  
ourselves



Flexibility, Inclusivity, Resilience, Multidisciplinary  
(FIRM) change needed



Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
**GOALS**

# Partnering with FAO to make fisheries sustainable

Working for **#ZeroHunger**