

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

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# 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



<https://theconversation.com/discard-ban-can-benefit-fish-and-fishers-but-sustainability-must-come-first-26769>

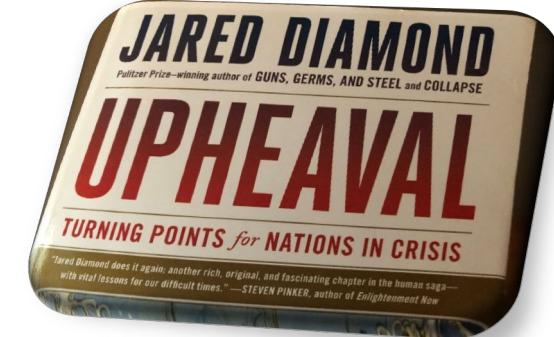
## SOCIAL LICENSE

Prioritise and stage actions and identify opportunities and bottlenecks



Extracts: Prof. Jared Diamond (2019)

Upheaval: Turning Points for Nations in Crises

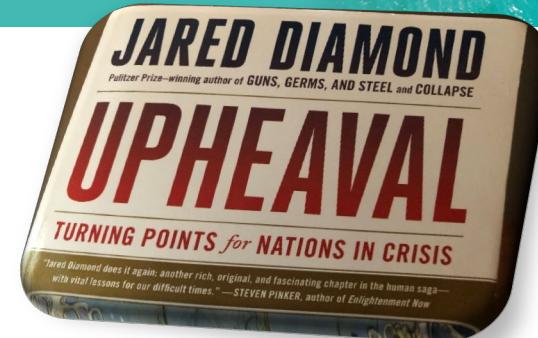


- 1. Acknowledgment that one is in a crisis:** fisheries, food security, climate change
- 2. Accept responsibility:** diverse groups differ in views
- 3. Building a fence/selective change:** selectively change specific policies
- 4. Help from others:** sharing advisors, economic help
- 5. Learn from 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]



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!]

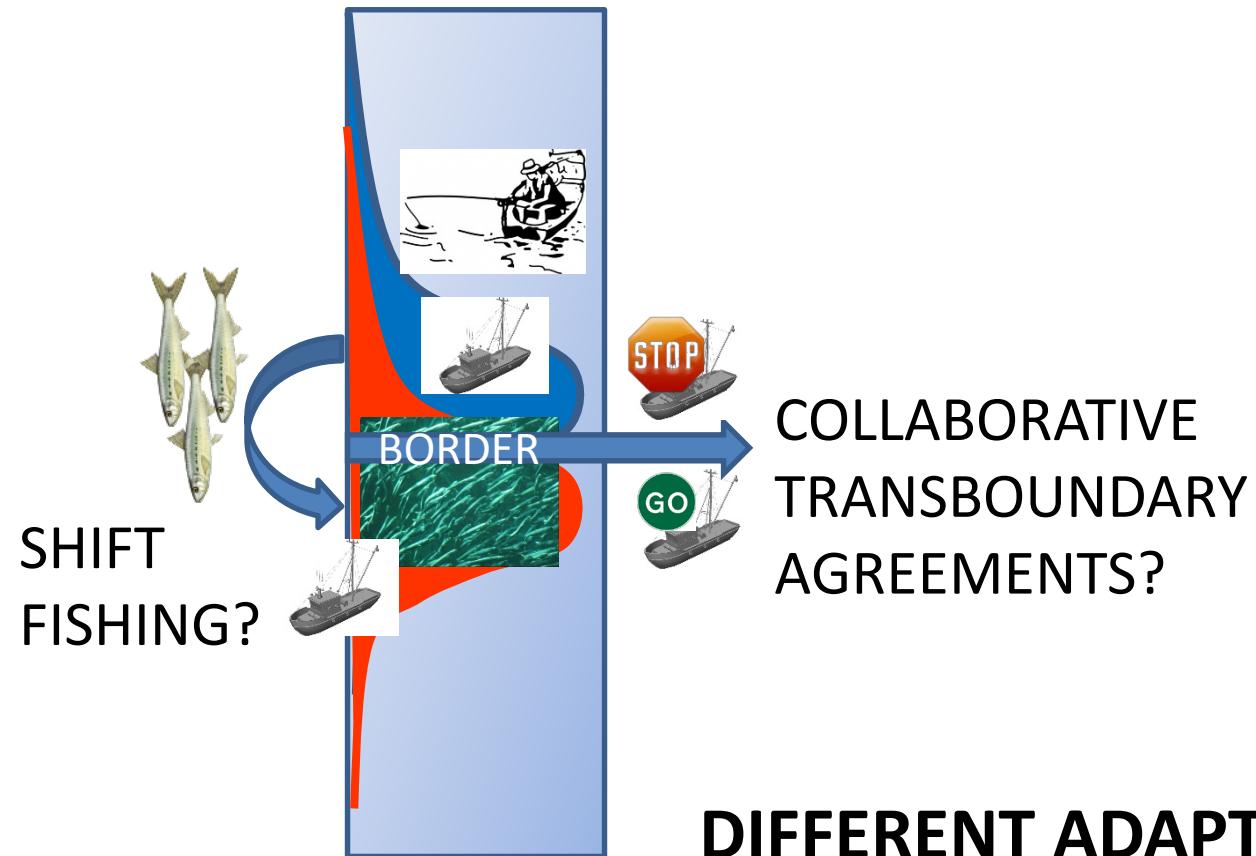
# EXTREME ADAPTATION STRATEGIES

- 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





Shift fishing locations,  
monitoring & technology to  
find fish



vs



CHANGE TARGET  
SPECIES, GEAR,  
LEGISLATION?



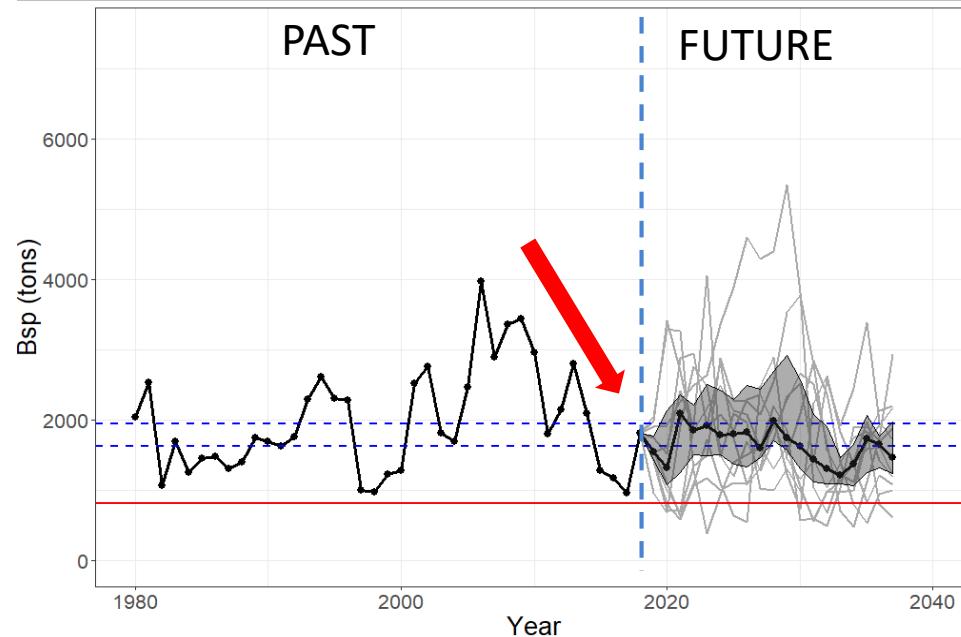
New species  
assemblage



Pre-climate  
change  
assemblage

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



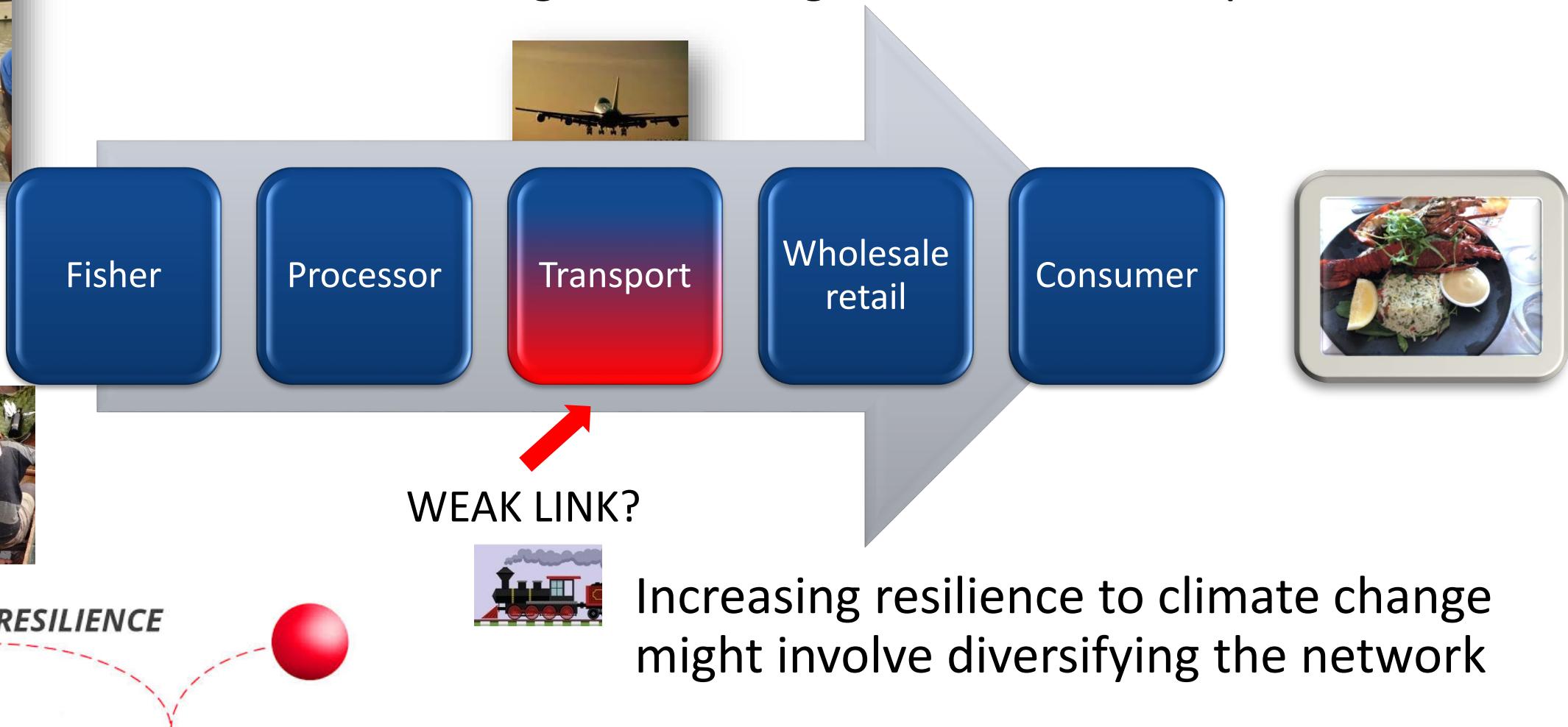
Fish have vital contribution to global food and nutrition security BUT we need to adapt dietary preferences

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



# 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

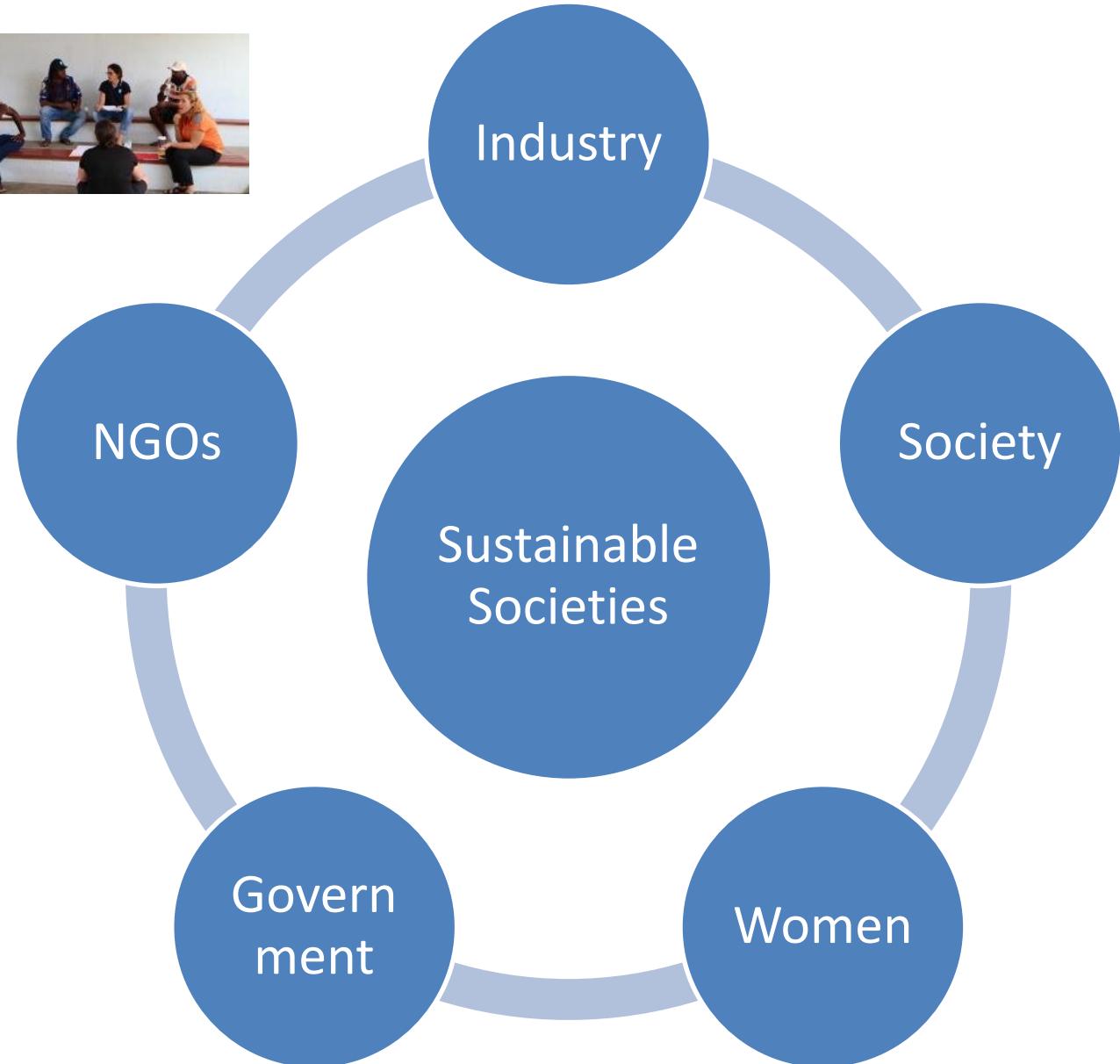
- Decoupled mechanisms can cause global instability in long-term
- Enhance biological and social diversity to support adaptability

# 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



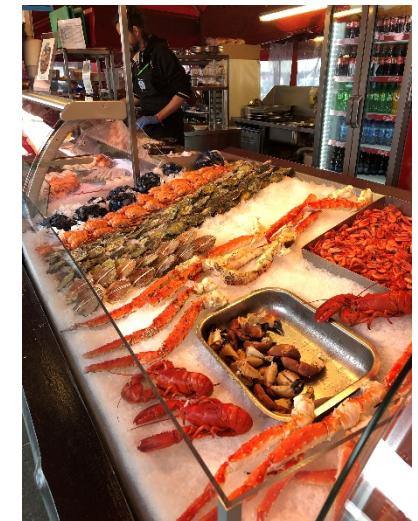
# REACTIVE vs PROACTIVE ADAPTATION



**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



- ✓ **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



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