

# Communities, Climate Change and Adaptability

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# Small-Scale Fisheries and Adaptation

## My use of Terms and Concepts

- Small-scale Fisheries
  - By North Atlantic standards – first hand exposure
  - By Global Standards - IPBES and WOA
- Adaptation
  - What it means in IPCC uses: lawful, structured
  - What it means in IPBES uses; creative, dynamic, but lots of inertia and momentum
- What did I get “insights” about it?
  - Research: Fisheries, Food Security & Climate Change
  - Policy advisory contexts: IPBES, WOA, UN-DESA, CBD...

# What are the strengths of communities in SSF / livelihoods contexts

- Flexibility
  - They have survived by recognizing events in their surroundings and reacting appropriately
  - Tend to invest in “portable” and multiple-use capital infrastructure & technology
  - Can draw on labour force that is skilled but not too highly “guild-structured” on micro-scales
- Awareness – they are connected to the parts of “Nature” on which their livelihoods depend.
- “Networked” –Share experiences and lessons learned (within reason)

# What are the “challenges” of communities in SSF/livelihoods contexts

- Top-down monitoring and surveillance costly and of limited effectiveness
  - Important management tools won't work
- Limited capacity for medium term actions
  - Insufficient capital for extensive contingency planning
  - Limited mobility while still maintaining identity
- “Stable systems” are highly invulnerable to more mobile and technologically intensive strategies
- Sense and reality of self-governance important

# What is needed to keep fisheries sustainable

- Effort control (direct or not)
  - License limitation, ITQs etc
- Non-destructive ecosystem fishing practices
  - Gear impacts, bycatches, community structure
- Trust between management authorities and participants in fisheries
  - Drive for devolution of decision-making
- Stable and reliable chains from catch to markets

# Combine these, add climate change, and what do we get? (1)

Communities will need to know:

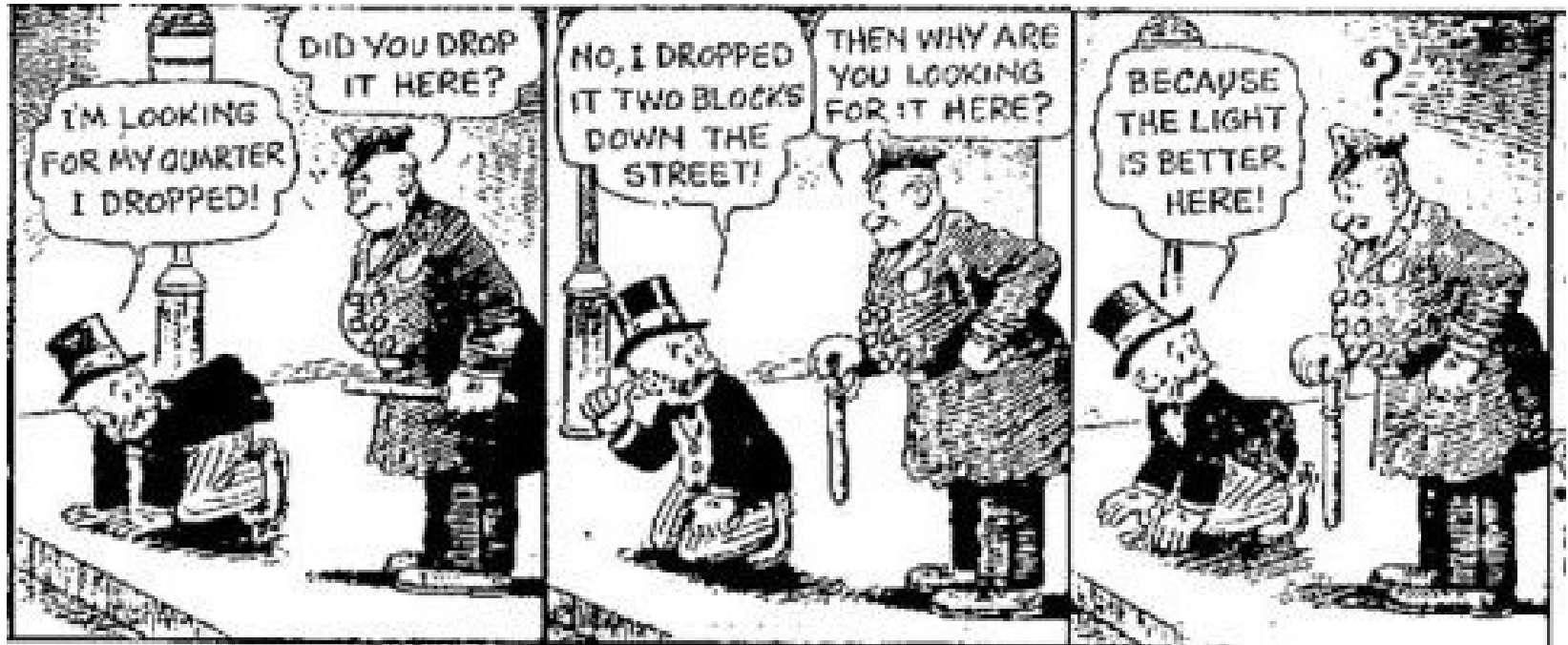
- if key current target species will decrease AND if new species will be becoming available
  - obvious implications
  - If this is only issue, SSF fishers can adapt (plays to their strengths)
- how the role of fishing might change within their livelihood strategy:
  - What will happen to agriculture, forestry etc.
  - New demands on time from storms, sea level change ...

# Combine these, add climate change, and what do we get? (1)

Communities will need to know:

- If regulatory frameworks will change:
  - Changing species composition makes licensing controls impede flexible responses
  - Species – at – risk controls may amplify
- how market chain structure and receptivity may change:
  - Reliability, regularity and timing of supply
  - What's competing in the traditional markets

What information do communities need to address these issues (suitable “thermal envelop” models)





# What do we need to look at as scientists and modellers?

- Forecasting PHENOLOGY of seasonal patterns
  - When to prepare for seasonal fisheries
  - How to budget timing of multi-skill livelihoods
  - Augment with forecasting of seasonality of storms
- How are *rare* and charismatic species going to change distribution
  - These are increasing often “choke” species and need to plan to avoid bycatches
- Will mid & high latitude systems become more species rich
  - Many more mixed-fishery challenges
- Lots of social science needs for understanding “adaptations”

# What do we need to look at as managers / regulators

- Licensing
  - How to simultaneously manage effort and allow communities the flexibility they can use to accommodate on-going change?
  - Multiple scale dimensions essential to consider.
- Spatial & temporal control measures
  - Effectiveness will change, & temporal likely to be harder
- Protected species regulations
  - Protected species are not “protected” from CC
  - Abundance & distribution will change
  - Current regulatory frameworks hypersensitive to presence of protected species, so increasingly intrusive under CC

# What do we need to look at as social scientists & communities

- How many aspects of livelihood strategies are going have to adapt to climate change
  - What mixes of adaptation strategies will be even feasible, let alone stable
- Human demographics and migrations
  - How will food security needs change?
  - Direct and indirect (conflict) climate migrants will be an increasing reality, and most end up coastal
    - Hpw will they change effectiveness of community-based management