

# Good practice recommendations for making Climate Adaptation Plans for fisheries and aquaculture

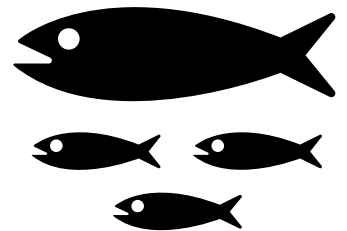
## - CAP Guidelines -

2020 International Forum on the Effects of Climate Change on Fisheries & Aquaculture  
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Jónas R. Viðarsson

Matís  
Iceland



ClimeFish

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# What is climate adaptation?

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A process of adjustment to actual or expected effects of climate change

Includes changes in **processes**, **practices** and **structures** to reduce or avoid potential damages or benefit from opportunities

Noble et al. 2014; UNFCCC, 2018



# Incremental adaptation

Small adjustments to maintain the essence of an existing fishery or aquaculture system



# Transformational adaptation

Fundamental changes at greater scales, requiring greater effort



- Changing gear or fishing method
  - Strengthening infrastructure
  - Changing processing & preservation methods
  - Updating of health & safety procedures
  - Improved monitoring activities
- 
- Changes of livelihoods
  - Governance adaptations, nationwide or international
    - Legislative changes
    - Improved cooperation
    - Subsidies



# The CAP Guidelines

Wild capture fishery – Aquaculture – Lakes and ponds



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# ClimeFish CEN Workshop Agreement

*Good practice  
recommendations  
for making  
Climate  
Adaptation Plans  
for fisheries and  
aquaculture*

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**For fisheries and  
aquaculture**

**Accessible**

**Co-creation with  
stakeholders**

**Ecosystem approach**

**Risks - Vulnerabilities**

**1**

**Also applicable to other  
sectors**

**2**

**Easy to understand and  
apply**

**3**

**Stakeholder participation  
throughout**

**4**

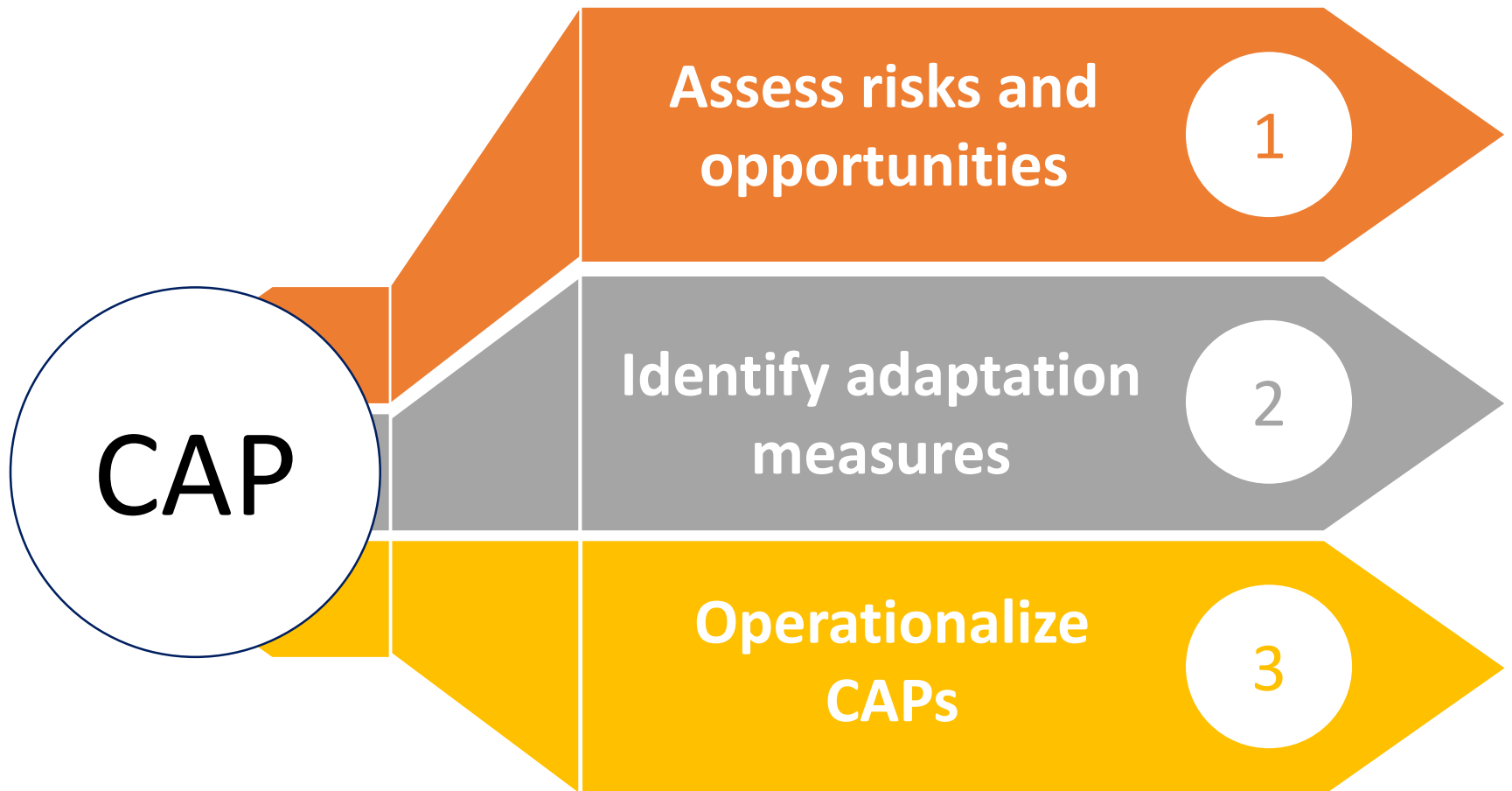
**Considers all components  
Ecological – Social – Economic  
– Governance**

**5**

**Identifies and prioritizes  
towards adaptation**



# Three Tasks



# Three Tasks

**Assess risks and opportunities**

1

1. Evaluate current status
2. Biological forecast
3. Risk assessment

**Identify adaptation measures**

2

4. Vulnerability
5. Adaptation needs
6. Adaptation measures

**Operationalize CAPs**

3

7. Implementation plan





# FINAL CAP

Main risks and opportunities

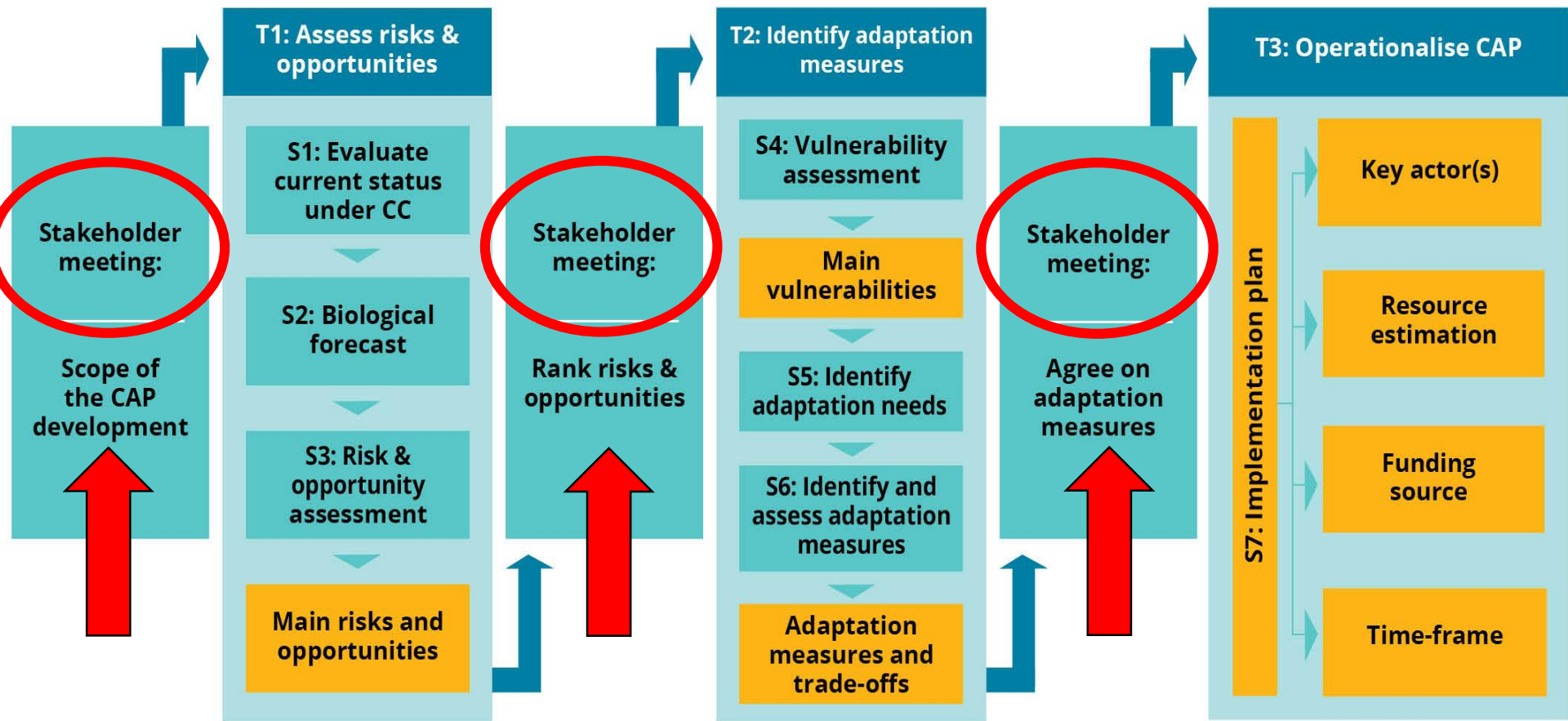
Main vulnerabilities

Adaptation measures and trade-offs

Adaptation implementation plan

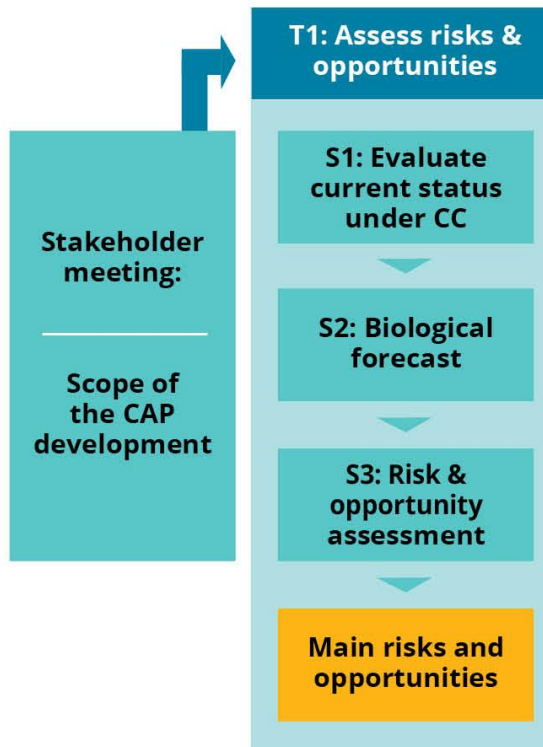
(Key actors, resource estimation,  
funding source, time-frame)





# Three stakeholder meetings

## Co creation



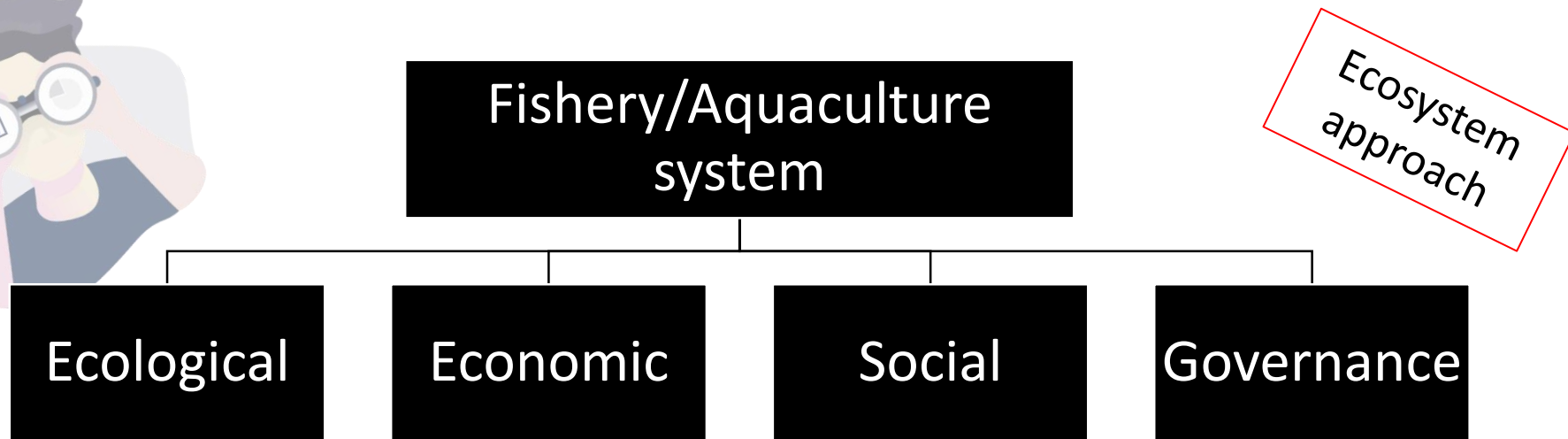
# Task 1

## Assess Risks and Opportunities



# Step 1:

## Evaluate current status



A resilient fishery or aquaculture system:

Resilient **ecosystem**, a resilient **management institution**, a set of resilient fishing or fish farming **communities**, and a **resilient socio-economic** structure (Charles, 2005)





# Step 2

## Biological forecast



Information and/or model forecasts of expected changes under climate change

Components from Step 1 modelled **as possible**

### Fisheries

Spatial distribution, migrations, spawning, recruitment, growth rates, emerging species, prey, trophic interactions, fishing pressure,

### Aquaculture

Growth rates, diseases, mortality, harmful algal blooms, water quality, site suitability (offshore/inshore), stocking rates and densities



# Step 3

## Risk (and opportunity) assessment

### T1: Assess risks & opportunities

S1: Evaluate current status under CC

S2: Biological forecast

S3: Risk & opportunity assessment

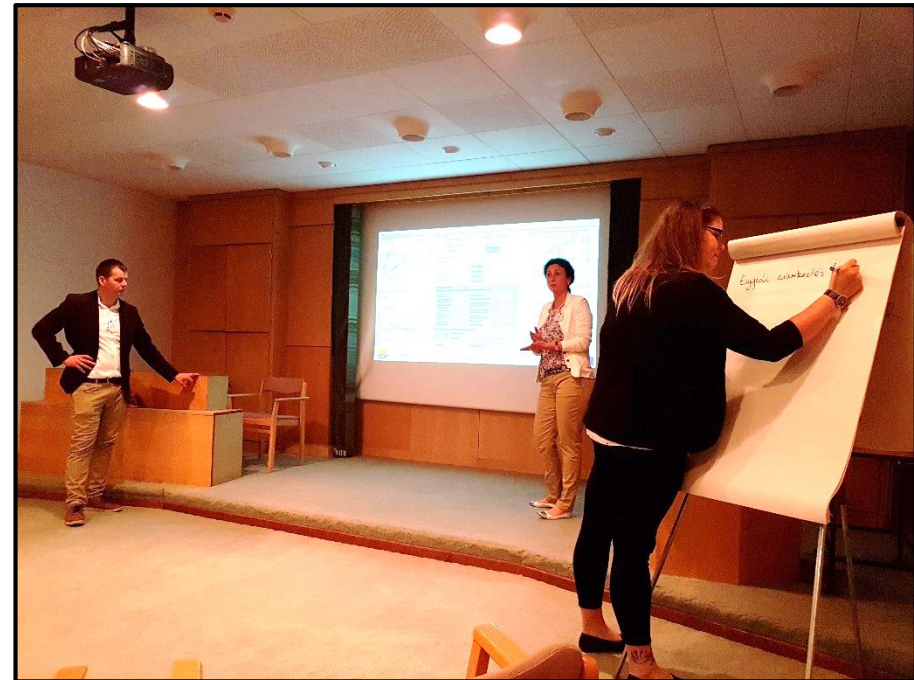
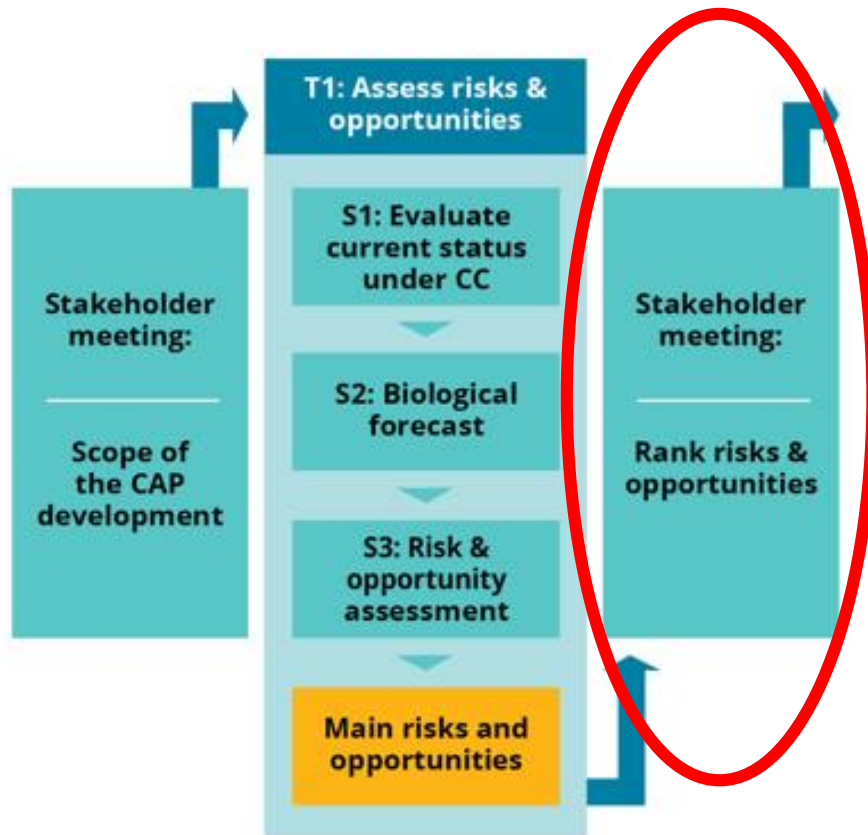
Main risks and opportunities

- Negative AND positive impacts
- Risks/opportunities should be ranked
- Qualitative and quantitative methods



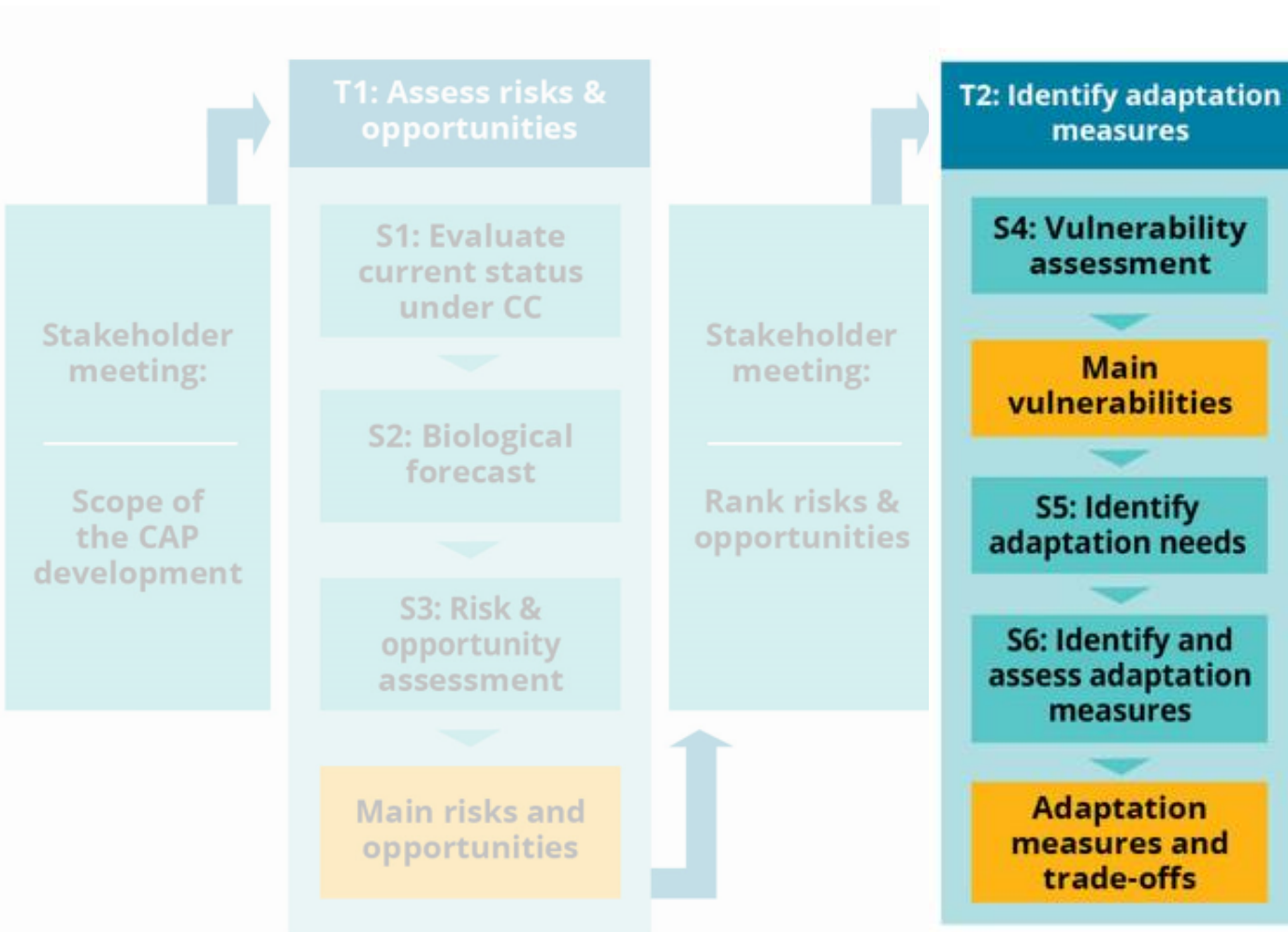


# 2<sup>nd</sup> Stakeholder meeting



# Task 2

## Identify adaptation measures



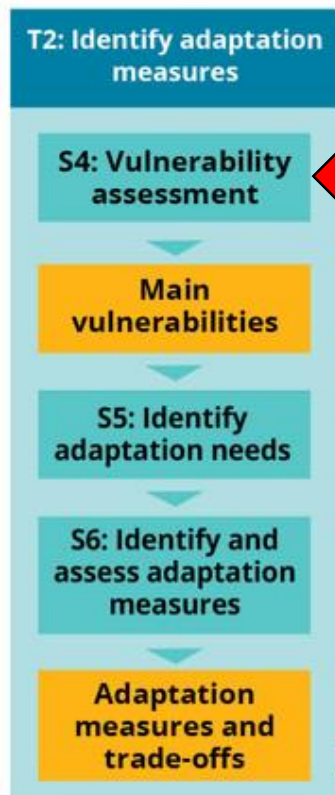
*Identifying needs stemming from climate risks and vulnerabilities provides a foundation for selecting adaptation measures*



# Step 4

## Vulnerability assessment

What components are most vulnerable to climate change?



**Adaptive capacity:**  
Abilities and resources to cope with climate-related changes



Human capital



Social capital



Natural capital



Physical capital



Financial capital



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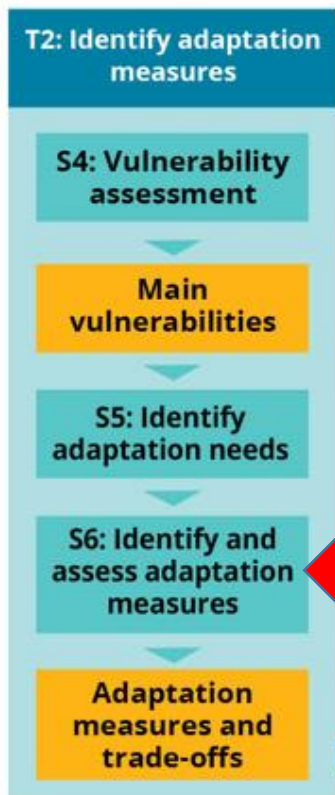


# Step 6

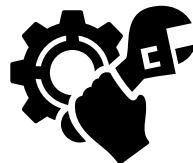
## Identify and assess adaptation measures

Measures that reduce the vulnerabilities  
and mitigate the biggest risks

Help fill the adaptation need



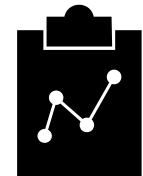
Industry level  
adaptation  
measures



Policy  
recommendations

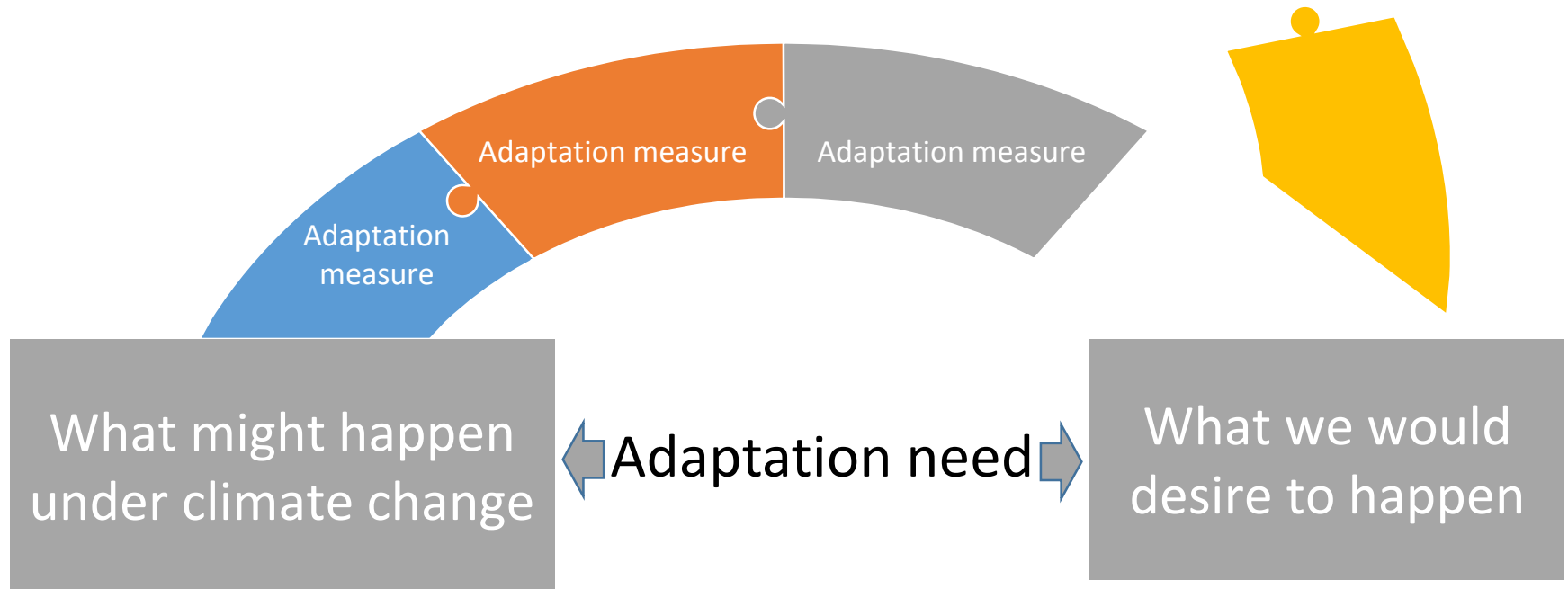


Research and  
knowledge gaps



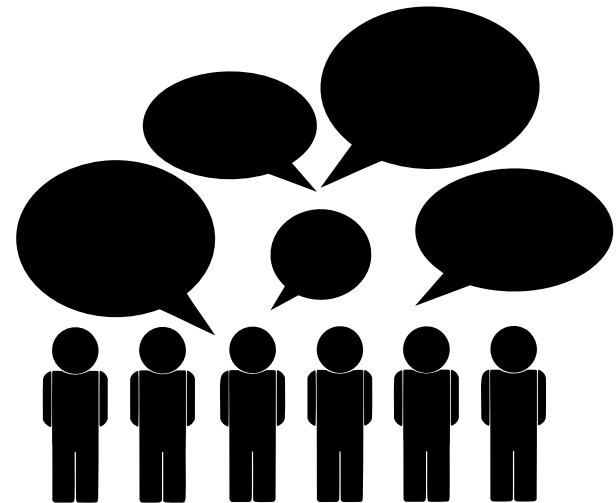
Often a gap between adaptation needs and the effectiveness of the measures to meet these needs, even when well resourced and implemented

Noble et al. 2014 – IPCC 5<sup>th</sup> assessment report



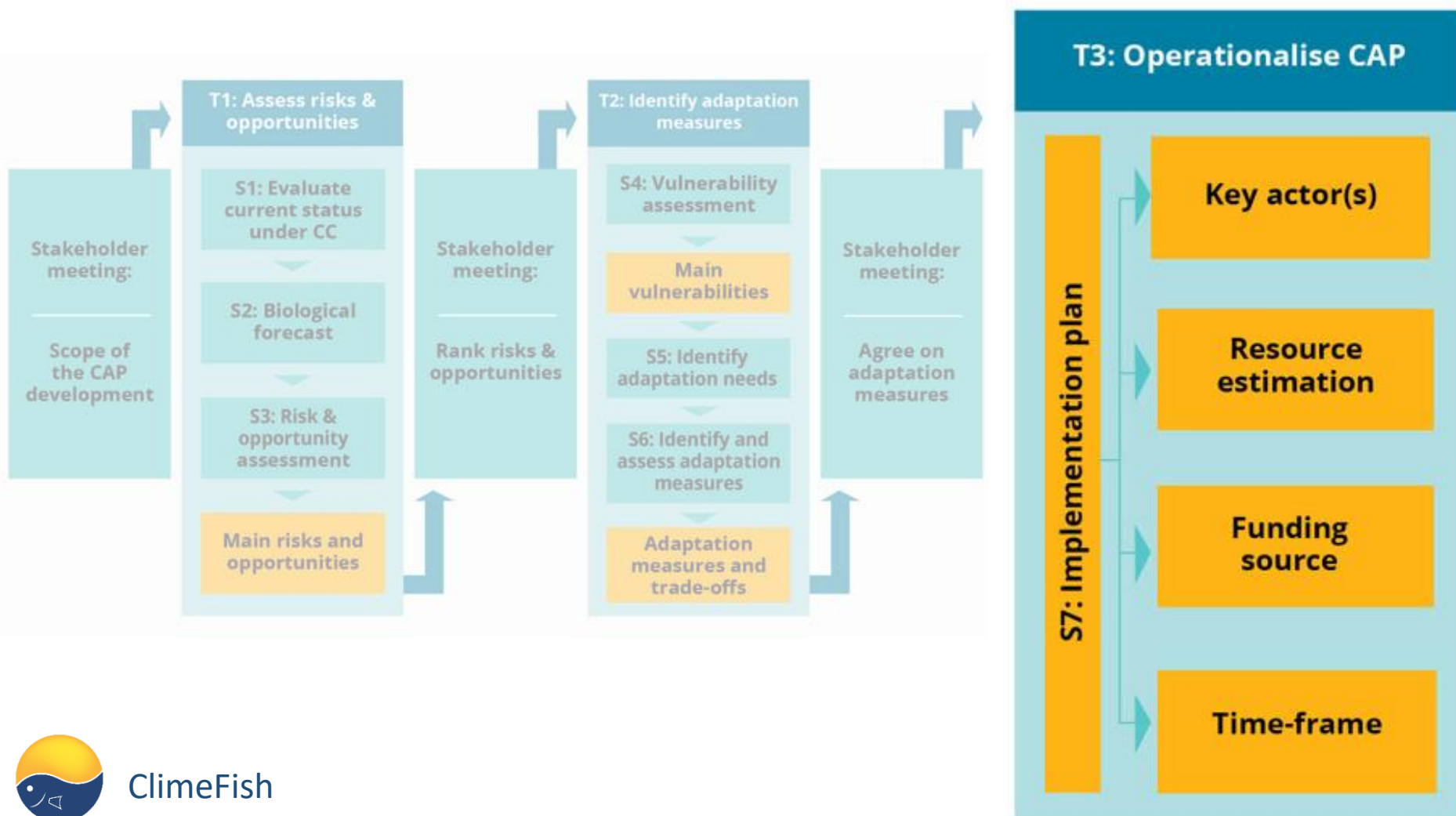
# 3<sup>rd</sup> Stakeholder meeting

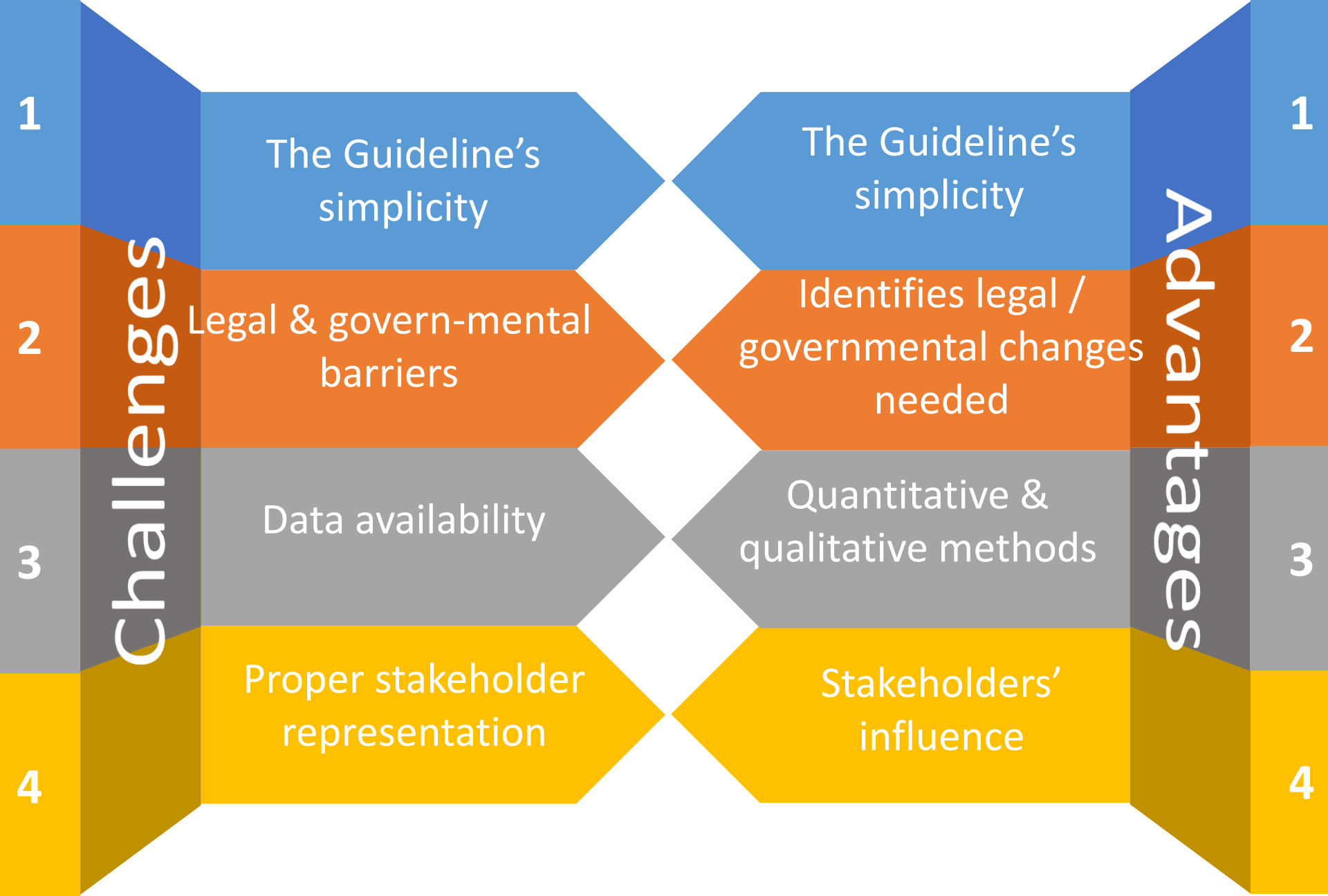
Discuss and  
agree on  
adaptation  
measures



# Task 3

## Operationalise the CAP





# Thank you!

## References

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