

The background of the slide features a complex, abstract network diagram. It consists of numerous nodes of varying sizes and colors (dark blue, light blue, and grey) interconnected by a web of thin, light grey lines. Some nodes are highlighted with larger, concentric circles. The overall aesthetic is modern and technical, suggesting themes of connectivity, data, or systems.

IMPACTS OF THE IMPLEMENTATION OF RESPONSE MEASURES: SCENE SETTING

Lindsay Shutes, Consultant Economist

AIMS

- Establish common definitions
- Outline the process of discovery
 - Climate change
 - Climate change response measures
- Overview of current research
- Introduce framework for discussions
 - How can social science help?
- Locate the coming dialogue in the wider framework

RESPONSE MEASURES & UNFCCC

The Parties included in Annex I shall strive to **implement policies and measures** ... in such a way as to **minimize adverse effects**, including ...effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties.

Kyoto Protocol, 1997

Parties shall take into consideration in the implementation of this Agreement the concerns of Parties with economies **most affected by the impacts of response measures**, particularly developing country Parties.

Paris Agreement, 2015

Support Parties to **maximize the positive impacts and minimise the negative impacts of the implementation of response measures**.

Katowice Committee of Experts, established 2018

COMMON DEFINITIONS

IMPACTS OF THE IMPLEMENTATION OF RESPONSE MEASURES

Response measures: **climate change mitigation policies, programmes and actions**

- Global, multinational, national, sub-national
- Government, private sector, individual
- Market, non-market

Implementation: **actions that are in place or under consideration**

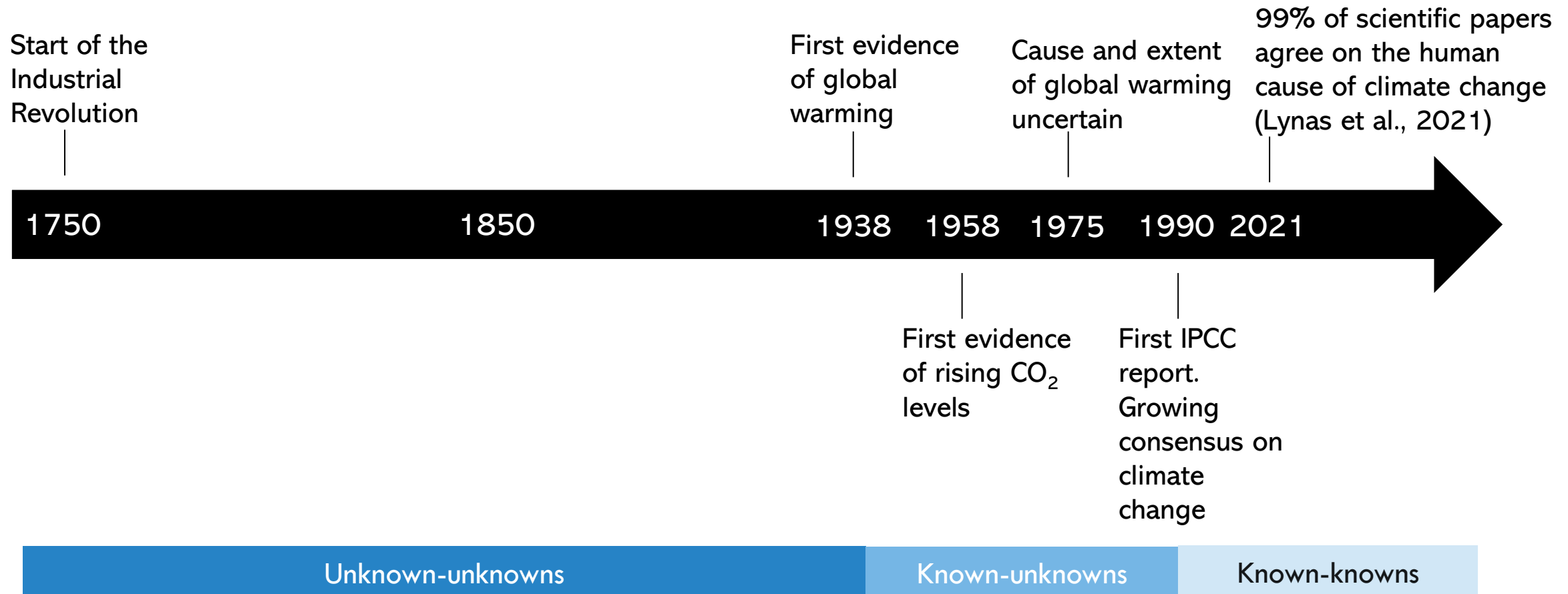
Impacts: **observed or expected effects**

- Social, economic, environmental
- Positive, negative
- Intended, unintended
- In country, across borders

PROCESS OF DISCOVERY

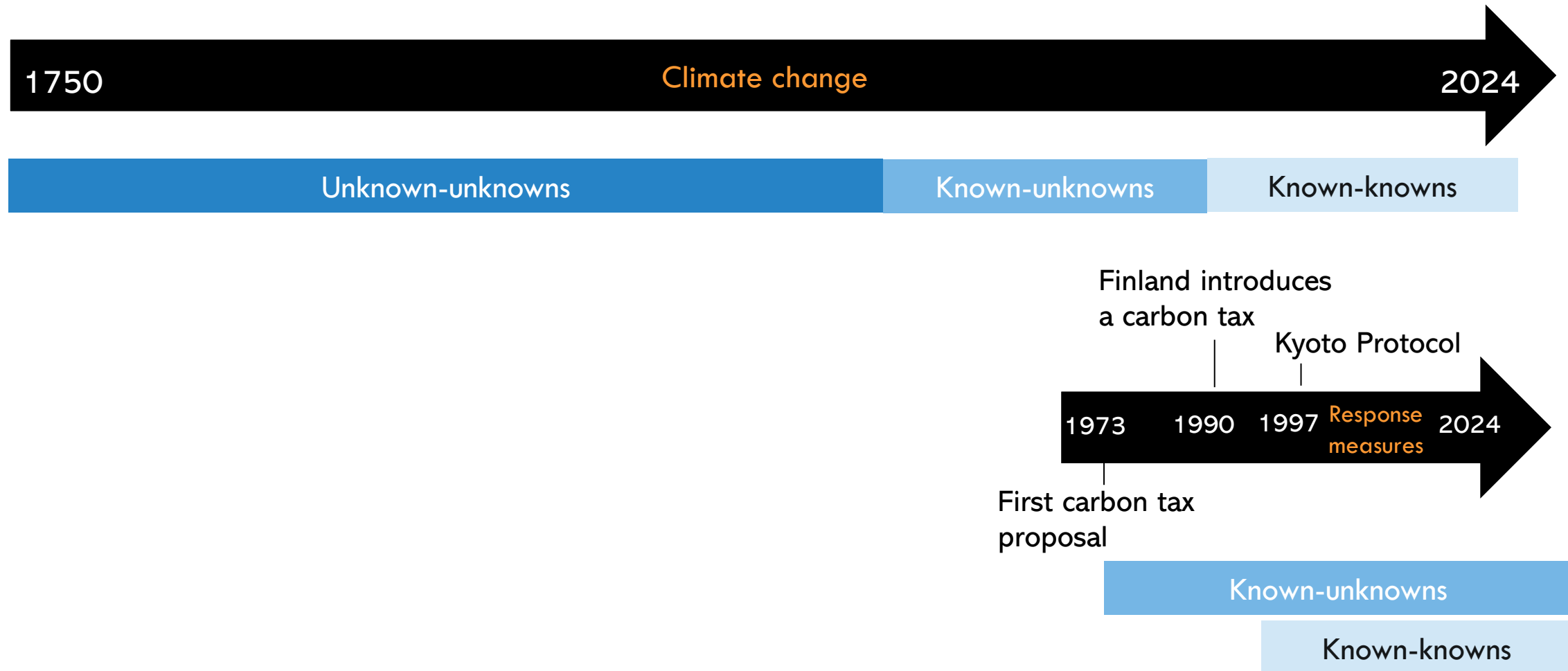
	Known	Unknown
Known	Known-knowns Information we are aware of and have evidence for	Known-unknowns Information gaps we are aware of
Unknown	Unknown-knowns Information we are unaware of	Unknown-unknowns Information gaps we are unaware of

PROCESS OF DISCOVERY: CLIMATE CHANGE



Source: A brief history of climate change discoveries, UK Research and Innovation

PROCESS OF DISCOVERY: RESPONSE MEASURES



RESPONSE MEASURES: KNOWN-KNOWNS

IPCC Assessment Report 6, 2023

Synergies & trade-offs between mitigation options and sustainable development

- Improved forest management can enhance biodiversity, employment and local livelihoods
- Afforestation can have adverse socio-economic and environmental impacts, including on biodiversity and food and water security













Context and scale matters

- Social, economic, environmental, cultural, political circumstances, resource endowment
- Ambitious mitigation pathways imply large and sometimes disruptive changes in existing economic structures, with significant distributional consequences within and between countries

Ways to minimise trade-offs

- Economy-wide packages
- Climate resilient safety nets and social protection
- Improve access to finance for low-emissions infrastructure and technologies, especially in developing countries

RESPONSE MEASURES: KNOWN-KNOWNNS

Selected studies	Policy	Implementing countries	Impact assessment country	Impacts		
				Social	Economic	Environmental
UNFCCC (2024)	Carbon tax	Global	Maldives			
UNFCCC (2024)	International transport emissions reduction	Global	Maldives			
UNFCCC (2020)	Energy taxes	Global	Senegal			
Reis Teixeira da Costa et al. (2019)	Domestic coal phase out	Chile	Chile			

Heterogeneous contexts → heterogeneous impacts

RESPONSE MEASURES: KNOWN-UNKNOWNNS

Factors affecting the impact of response measures

- Participation or non-participation in climate action
- Net oil exporter or importer
- Share of renewables in the energy mix
- Share of income from oil or tourism
- Degree of integration with world markets (trade dependence)
- Location *cf* transport costs

How do these factors combine to affect the impact of response measures in each country?

MOVING TO KNOWN-KNOWNNS

Studies

- Country specific
- Policy specific

Data

- Social Accounting Matrices
- Surveys
- Using available data: national accounts, SEEA, international trade databases

Capacity

- Capacity building
- Access to qualitative and quantitative tools for impact assessment

SOCIAL SCIENCE AS A GUIDE

We cannot change something unless we know it exists.

T. Harv Eker

- Climate change vs. climate policy
- Natural science vs. social science
- Complex systems
- Tools from economics
 - General equilibrium linkages
 - Circular flow
 - Tinbergen rule

GENERAL EQUILIBRIUM LINKAGES



Many policies have impacts beyond their intended effect

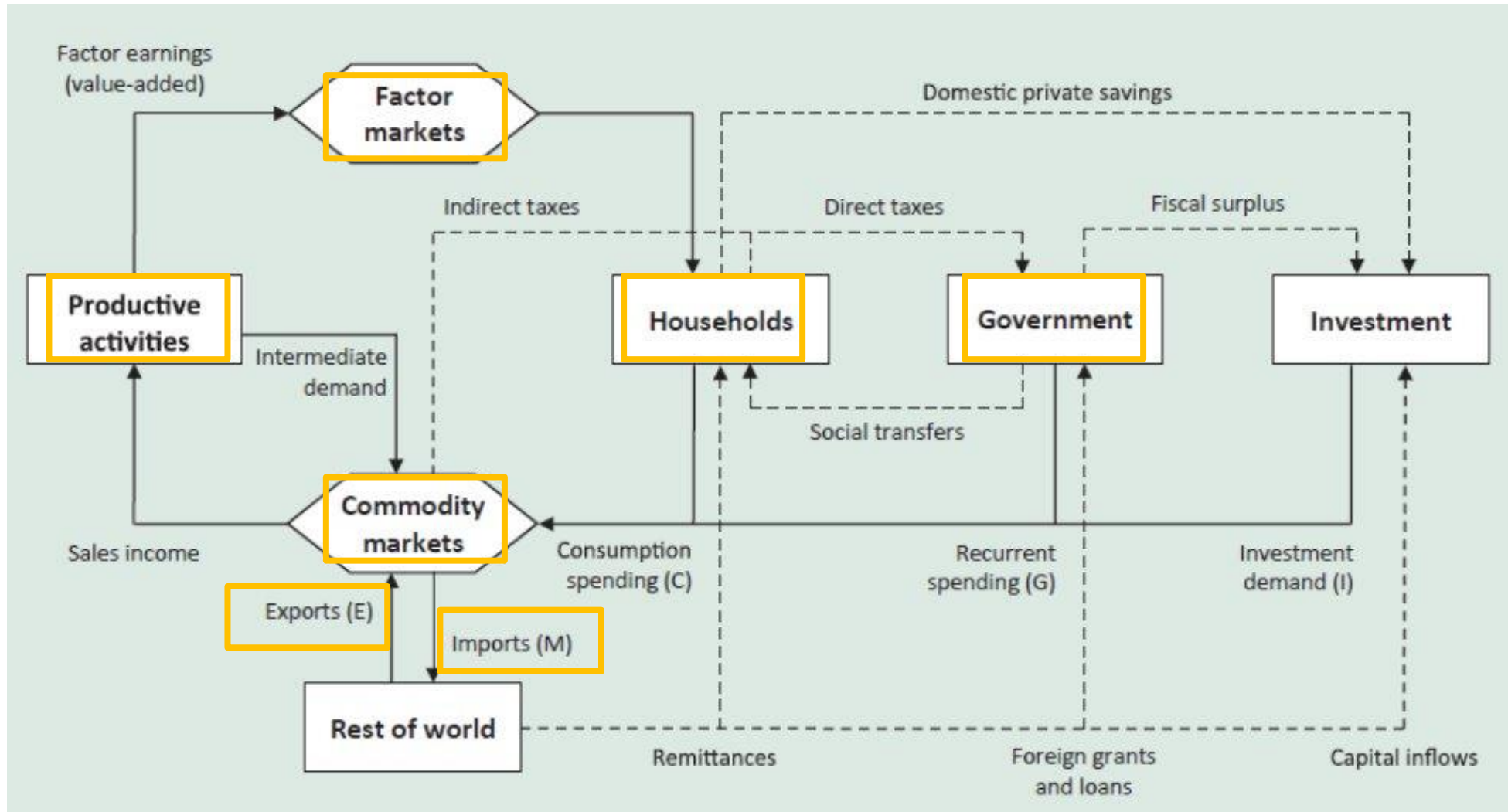
Expected effects depend on viewpoint

General equilibrium linkages: multiple market view

Brexit

- Many voters: save on payments to EU, reduce labour into UK → better off
- General equilibrium view: lower cheap labour supply, higher costs of trade, less favourable investment environment → worse off

CIRCULAR FLOW



TINBERGEN RULE

Multiple policy objectives typically require multiple policy instruments

Jan Tinbergen, first Nobel prize winner in economics

First round

- Objective: reduce emissions
- Policy instrument: carbon tax

Observed effect

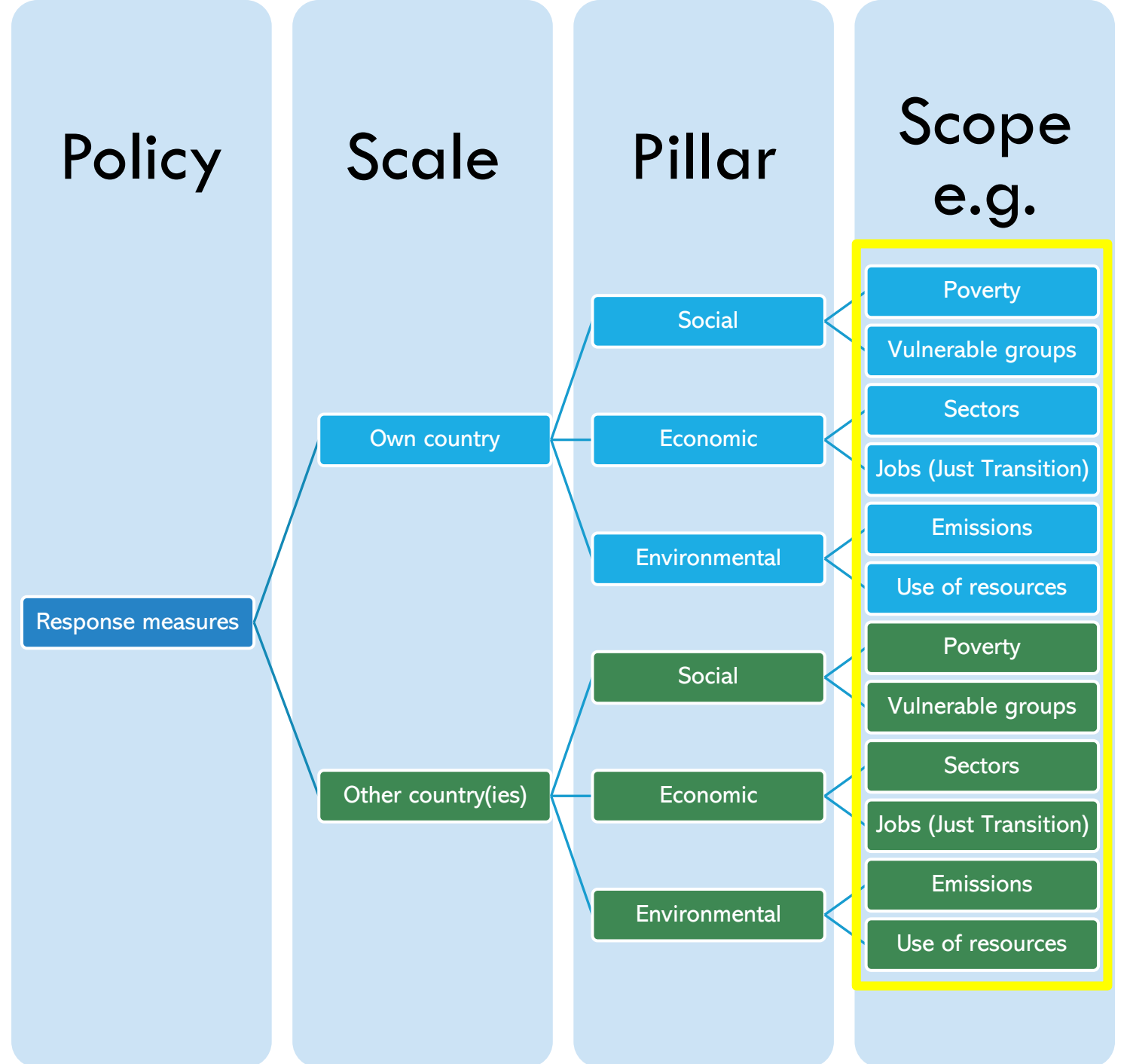
- Unintended carbon leakage

Second round

- Objective : limit carbon leakage
- Policy instrument: Carbon Border Adjustment Mechanism

	Second round policy		
First round policy	Social	Economic	Environmental
Response measure	X	X	X

A DISCUSSION FRAMEWORK



SUMMARY

Impacts of response measures definition

- Impacts across multiple domains from a wide-range of climate actions

Where we are: known-knowns and known-unknowns

- IPCC: Expect synergies and trade-offs
- Context matters → more studies needed

Tools from economics

- Ripple effect of policies within and between countries
- One policy objective → one policy instrument

Much to discuss!

Thank you for your attention

