

National Modelling in Practice

Role of Capacity Building & Collaboration
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Background

How we envisioned collaborative national modelling

- Work Package 1

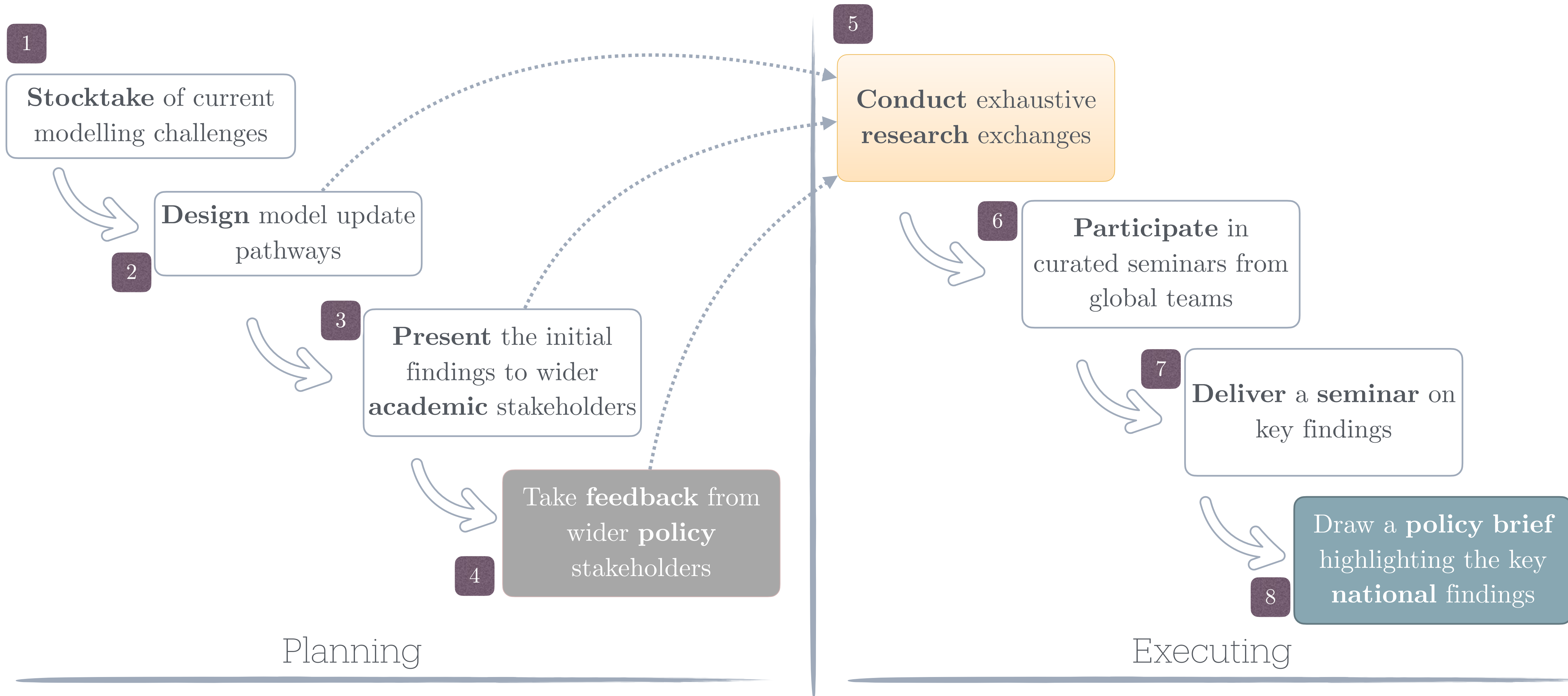
*Strengthening modelling capacity and the **underlying network** within target Asian countries and fostering greater engagement with international networks of modellers so that **modelling skills** and **policy-relevant modelling experience** were more widely available to support ambitious national and global climate action.*

- Work Package 5

*Improvement in the understanding of how **models** and **policy** options can inform each other via **identification** of stakeholders and **organising** national stakeholder meetings*

Background

Collaborative national modelling in practice



Timeline

Research Exchange

	2023												2024												2025												2026									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42				
Research Exchnages																																														
Stakeholder Engagements																																														

Presenter	Global Partner	Affiliation	Date
IU-HCMC (Vietnam)	Kyoto University, Japan	Updating AIM-Hub model	Feb-Mar 2024
ZJUT (China)	PBL, Netherlands	Linkage of biodiversity impacts to energy model	Jul-Dec 2024
Tsinghua University (China)	PIK, Germany	Influence of hydrogen on carbon neutrality	Jul-Dec 2024
LUMS (Pakistan)	IIASA, Austria	MESSAGEix-Pakistan model development and NDC analysis	Apr-Aug 2025
ACE (Indonesia)	IIASA, Austria	MESSAGEix-Indonesia model development	Jan-May 2025
TERI (India)	ACE, Indonesia	Development of India LEAP model for ad-hoc government requests	Jan-May 2025

Key Findings

- ***Advanced Model Enhancement & Technical Integration***

Researchers significantly *upgraded* integrated assessment models by embedding detailed, process-based architectures and robust historical databases. These enhancements expanded the *models' capabilities* to accurately simulate complex low-carbon transitions, emerging technologies, and regional emission reduction pathways.

- ***Strategic Capacity Building & Knowledge Transfer***

Through a mix of continuous *remote training and hands-on* institutional placements, the initiatives successfully equipped next-generation researchers with *advanced analytical skills*. Regional teams mastered the *technical foundations* required for autonomous model calibration and independent, long-term climate mitigation analysis.

- ***High-Impact Academic & Policy Outcomes***

The international partnerships directly *yielded robust deliverables, including peer-reviewed publications, advanced working papers, and strategic policy briefs launched at COP29*. These tangible outputs actively help align national energy transition scenarios with broader international climate objectives like the Paris Agreement.

- ***Cross-Project Synergy & Equity-Focused Analysis***

The exchange programs successfully *bridged the gap between capacity building, complex scenario design, and equity frameworks*. By implementing fair emissions allocations, the collaborative modeling provided a strong analytical foundation for evaluating ongoing Nationally Determined Contributions (NDCs) at a national level.

Thank you

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