

International Decision-making Processes

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Strategic Challenges
in International Climate
and Energy Policy

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Outline of presentation

- I. Global climate change mitigation as a *governance* challenge
 - I. ...in light of lessons learned from the study of international (environmental) regimes

- II. The ‘global challenge -> global solution’ approach (‘top down’)
 - I. What may we expect *global conference diplomacy* to achieve?

- III. The ‘clumsy solutions for a complex world’ approach (‘bottom up’)
[Verweij et al., *Public Administration*, vol. 84(2006), no. 4]
 - I. What may we expect *coalitions of the willing* – in particular, ‘*climate clubs*’ (Nordhaus) – to achieve?

- IV. Can some *combination* of the two approaches give us the best of both?



Why are some international regimes more effective than others?

General lessons from three decades of research

- Grossly simplified, there seem to be two main answers (Miles et al., 2002)
 - Because some **problems** are *easier to solve* than others
 - Because they are *better understood* or easier to understand
 - Because they are politically *more benign* problems (~ coordination problems)
 - Because some **groups** or **systems** have *greater problem-solving capacity* than others
 - For tasks defined in terms of collective action, Miles et al. pointed to three main elements:
 - The **institutional setting**
 - The **distribution of (basic game) power**, over the configuration of preferences
 - The supply of (non-coercive) **leadership**
 - **Success rates** (Miles et al., 2002)
 - Politically benign and well-understood problems & high-capacity systems: **.95**
 - Politically malign problems clouded by uncertainty & low-capacity systems: **.08**

Climate change mitigation: *an extremely demanding governance challenge*

- Climate change mitigation *combines* several features that make it an ***extremely demanding*** challenge of governance
 - **Very long time-lags** between policy measures (**~'costs'**) and environmental effects (**~'benefits'**)
 - Embeddedness in **highly complex systems** that are not fully understood
 - Links to **deep poverty and stark inequities** and to **high-stakes competition** in global markets and international politics
 - **Very large asymmetries** between 'guilt' in causing the problem and capacity to alleviate it on the one hand, and socio-ecological vulnerability to climate change on the other
 - Concern with **global collective goods** that are affected by **a wide range of human activities** and (as of today) beyond the reach of any 'single best effort solution'

The 'global problems -> global solutions' approach

Basic premises

- ❖ Global climate change is a **systemic** challenge, calling for solutions at **the same level** (~ global in scope)
- ❖ Global solutions affect people **worldwide** and should therefore be designed and implemented by the **global community**
 - Ideally through **universal** participation in **democratic** processes

Scientific rationale provided by

- ✓ Earth system science and collective action theory
- ✓ 'Good governance' research (from philosophy to political science)
 - Strong support from LDCs and many (E)NGOs



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What may we expect global conference diplomacy to achieve? (1)

- **The good news**: even faced with an extremely demanding challenge global conference diplomacy can be an effective tool for
 - **Setting agendas** and **focusing attention** worldwide
 - **Organizing joint efforts** to build a consensual platform of research-based knowledge
 - Providing **arenas for diffusion** of policy ideas and practices (learning)
 - Generating, for those actively involved, **positive stakes** in its own success



What may we expect global conference diplomacy to achieve? (2)

- **The bad news:** When it comes to *effective substantive measures* global conference diplomacy becomes highly vulnerable to
 - **'Veto players'** ('the law of the least ambitious program')
 - **Deadlock** over basic principles (and 'worldviews')
 - Internal coalition dynamics that **enhance polarization**
 - The strains of **global competition** over wealth and power
 - The burden of sprawling agendas and **overwhelming complexity**



The 'clumsy solutions for a complex world' approach

Basic premises

- ❖ The human impact on the climate system can be traced back to **multiple systems of activities** that can more effectively be governed in **smaller clusters** or one by one
- ❖ A wide range of measures that can contribute to mitigation will be attractive to **a critical mass of actors** (also) for **other reasons**. Such win-win measures can be adopted and implemented with joint support from 'Baptists and Bootleggers'
- ❖ **Existing institutional capacity** can sometimes be used also for mitigation governance

Scientific rationale provided by

- ✓ Natural science research measuring the human impact on the climate system
- ✓ Social science studies of (multi-level) governance
- ✓ Strands of political science (and political economy) research, in particular political feasibility analysis
- ✓ As above



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Institutional alternatives at the international level: *Coalitions of the Willing ('Climate Clubs')*

- David G. Victor (2011:6): '(...) start with what nations are **willing and able to implement**'
- Also: '(...) start with the interests of the **most powerful countries**' (Victor 2011:265)
- ☐ A 'Climate Club' is founded by two or more 'enthusiasts' (frontrunners) to induce reluctant countries to join and contribute more by
 - Making their own commitments **contingent** (upon reciprocation)
 - Offering **club goods** (i.e., benefits available to club members only)
 - Offering **side payments** (to actors joining the club)
 - {Imposing **trade sanctions on non-members**; see e.g. Nordhaus 2015}



Coalitions of the willing: basic assumptions

- Most countries are indeed willing and able to take **some** meaningful steps towards mitigation (in some cases, though, for other reasons)
- *Which* steps will vary but many countries will go for **more ambitious** measures if allowed to choose what makes sense **given their particular circumstances**
- Willingness to contribute will to some extent increase with contributions from **important others**
- More can be achieved by taking advantage of **existing** international institutions
- The overall result will be a 'clumsy' patchwork of measures but it will likely **add up to more** than the UNFCCC 'global problem -> global solution' approach can deliver



Methodological approach: agent-based modelling (ABM)

- We need tools that are well suited for studying collaboration as an *evolving* (bottom-up) process
- ABM provides flexible tools for computational simulation of process *dynamics*
 - For example, mechanisms generating *momentum* or *cascading collapse*
- The ABM toolbox is particularly useful for studying processes involving
 - *Non-linear* evolution -> *emergent properties*
 - *Heterogeneous* groups, consisting of agents (actors) capable of *learning* and *adapting*



Modelling actors

- **‘Enthusiasts’** (frontrunners and likely climate club founders)
 - Have an *exogenous* motivation to contribute to reducing global GHG emissions
 - Behaviour will in part be premised on *norms*
 - Do not attempt to free-ride (even when opportunities arise)
 - Abandon club if and only if – after negotiating with all other potential members – the club gives them *negative net benefits* relative to the no-club scenario
 - A soft version of Axelrod’s (1984) ‘nice, retaliatory, forgiving, and clear’ recipe

- **‘Reluctant’** actors (beginning as outsiders)
 - Rational actors motivated by self-interest only; will join club only if private benefits exceed own abatement costs



Modelling climate clubs

- Potential members make **binary** decisions: membership or not
- Membership requirement ('fee'):
 - Undertake GHG mitigation costing **1% of own GDP**
- A *global* club (~ universal membership) reduces – over the long haul – global climate damage costs by **3%** (sensitivity tests 1.5% - 4.5%) of GGP
 - Smaller clubs' accomplishments: a linear function of the proportion of total emissions covered by the club
- The model acknowledges the asymmetries in wealth, emissions, and vulnerabilities that characterize real-world countries (but often left out in theory-building research)
 - But we have (so far) not tried to estimate effects of inter-state affinity scores (varying with e.g. conflict over *exogenous* issues)



Club growth achieved with different instruments

Club size measured in percentage of global emissions and {number of members}

(Borrowed from H. Sælen, 2015)

Club founder(s) (% of global emissions)	Cond. mitigation pledges	(Modest) club-good benefits	Cond. pledges & mod. club goods	Side payments to poorer partners
China (27)	0	0	47 {3}	46 {37}
USA (14)	0	41 {2}	47 {3}	67 {49}
EU (9)	0	36 {2}	56 {4}	63 {51}
China & USA (41)	0	41 {2}	47 {3}	73 {76}
China & EU (36)	0	36 {2}	56 {4}	68 {76}
USA & EU (23)	50 {3}	50 {3}	56 {4}	86 {89}



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Club growth as a function of club good benefits

Club size measured as percentage of global emissions and member countries

(Borrowed from J. Hovi et al., 2015)

Founder(s)	No club good	CG Benefits = 0.1	CG Benefits = 0.2
China	0	0	0
USA	0	41 USA, China	47 USA, China, India
EU	0	36 EU, China	61 EU, China, USA, India, Indonesia
China & USA	0	41 China, USA	47 China, USA, India
China & EU	0	36 China, EU	61 China, EU, USA, India, Indonesia
USA & EU	0	50 China, USA, EU	61 USA, EU, China, India, Indonesia
China, USA & EU	50 China, USA, EU	50 China, USA, EU	61 China, USA, EU, India, Indonesia
BASIC	37 BASIC	37 BASIC	37 BASIC
BRICS	42 BRICS	42 BRICS	42 BRICS



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Preliminary findings: general propositions

- ❑ Clubs that cover a substantial share of global emissions emerge under a range of circumstances that cannot outright be dismissed as mere phantasy
- ❑ *Universal* participation is, however, achieved *only with overly optimistic assumptions*
- ❑ Even a *single* (very) large emitter can initiate more cooperation through providing sufficiently strong incentives for *certain others* to join



Preliminary findings: effects of different *club growth strategies*

- ❑ **Conditional commitments** to mitigate more if others reciprocate achieve only one important 'recruitment'
 - **China** may respond positively to joint conditional commitments by the US and the EU

- ❑ With modest **club goods** (costs between .2% and .4% of a member's GDP), clubs consisting of two or three of the largest emitters can be viable
 - To attract other countries, however, more highly valued club goods will have to be provided (or a more complex scheme introduced, combining modest club goods with side payments and/or conditional commitments)

- ❑ **Side payments** are particularly effective for broadening participation to include smaller countries (in particular, *small developing countries*)
 - The side payments required are of the same order of magnitude as the Climate Fund contributions that developed countries have *collectively pledged* (USD 100 billion annually)



Empirical finding: no international *climate clubs* exist!

- Weischer et al., 2012: 183: '[t]here are no clubs for which the level of ambition is the membership criterion, in the sense that a country would have to demonstrate a certain track record or agree to specific commitments regarding emissions reductions as a criterion for being admitted to the club'
- Andresen, 2014: alternatives to the UNFCCC process have served largely as *fora for discussion* and are not 'clubs' as defined in this presentation (and by Nordhaus)



Can a combination of the two approaches *give us the best of both?*

- Significant progress at lower levels (e.g., within clubs and specialized regimes/organizations) **can** expand the settlement range in global negotiations
- UNFCCC negotiations **can** help shape agendas, focus attention, support the development of a consensual knowledge-base, and facilitate diffusion of policies and practices
- Yet, certain combinations are not likely to work well. One example is a voluntary 'Intended Nationally Determined Contribution' approach ***within the setting of UNFCCC conference diplomacy***

