

*Environmental Research,
Epistemic Community and
International Relations in Asia*

環境研究と21世紀アジアの未来

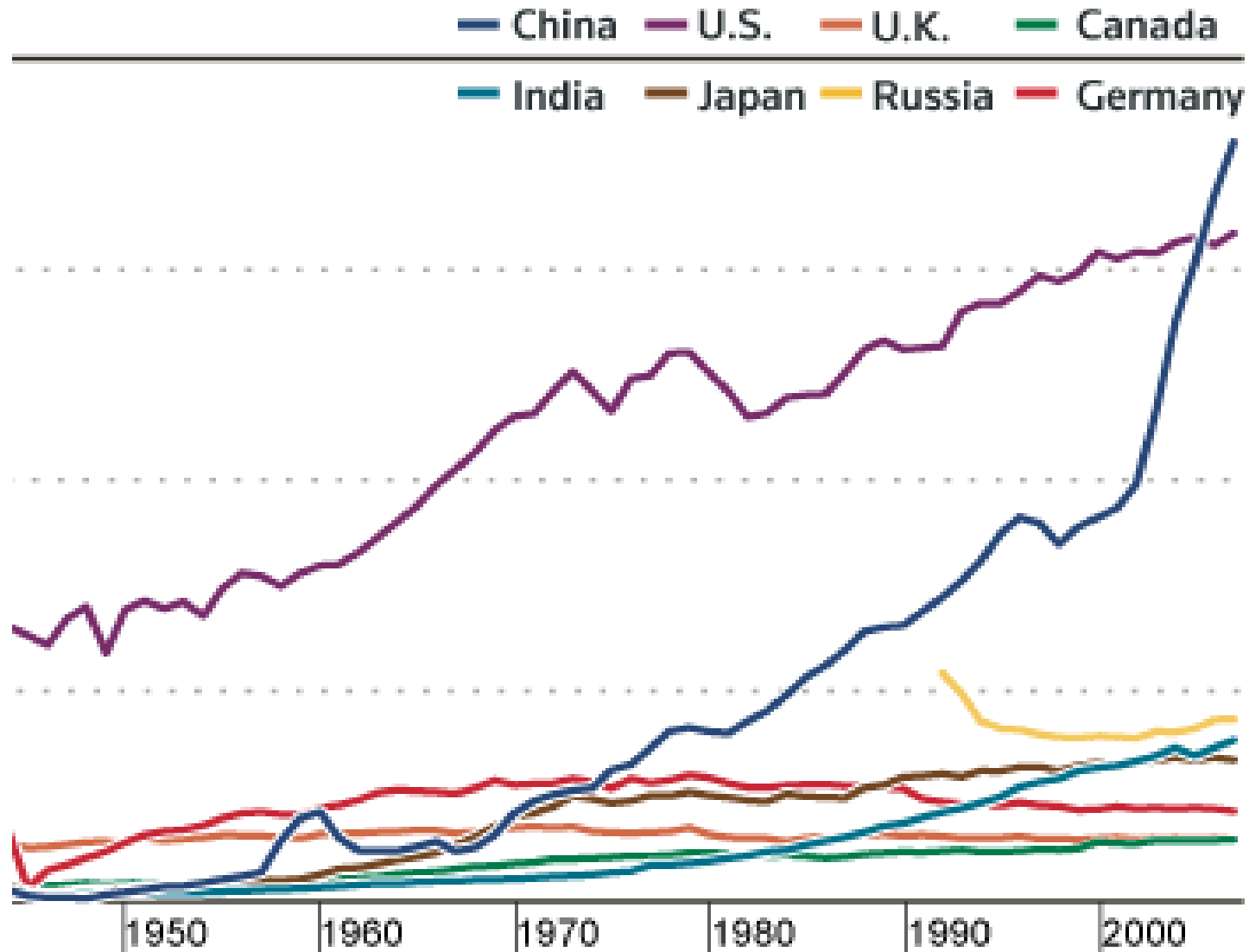
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- 1) Changing context of climate change negotiations 温暖化交渉の変質
- 2) Earth science meets environmental diplomacy 自然科学と外交の融合
- 3) Great variety of country systems and regimes in Asia
アジアにおける国のタイプの多様性
- 4) Environmental research and international relations
環境研究と地域の安定

世界のCO₂排出量 (米エネルギー省CO₂情報分析センター)

World carbon emissions



Merger of earth science & int'l politics

地球科学研究と国際政治の融合

| | Acid Rain | Ozon Layer | Climate Change |
|--|-----------------------------------|---|--|
| Initial warning 初期警告 | Later 1960s | 1974 | 1970s |
| Official scientific assessment 科学のアセスメント組織 | EMEP 1978～ | CCOL 1977～ | IPCC 1988～ |
| Negotiation arena 条約交渉の場 | UN-ECE 1978～ | United Nations Environment Programme 1981～ | Intergovernmental Negotiating Committee (INC)1990～ |
| Framework convention Signed Entry into force | LRTAP 1979 1983 | Vienna Convention 1985 1988 | UNFCCC 1992 1994 |
| Protocol Signed Entry into force | SOx NOx 1985 1988 1987 1991 | Montreal 1987 1989 | Kyoto 1998 2005 |
| Protocol Amendment Signed Entry into force | Oslo 1994 1998 | | |

Acid rain and int'l politics

1972 UNCHE (Stockholm)

1979 CLRTAP signed

1983 Pershing missile deployment

1984 EMEP Protocol (entry into force: 1988)

1985 Helsinki Protocol (entry into force: 1987)

1989 Berlin-Wall collapsed

1992 UNCED (Rio de Janeiro)

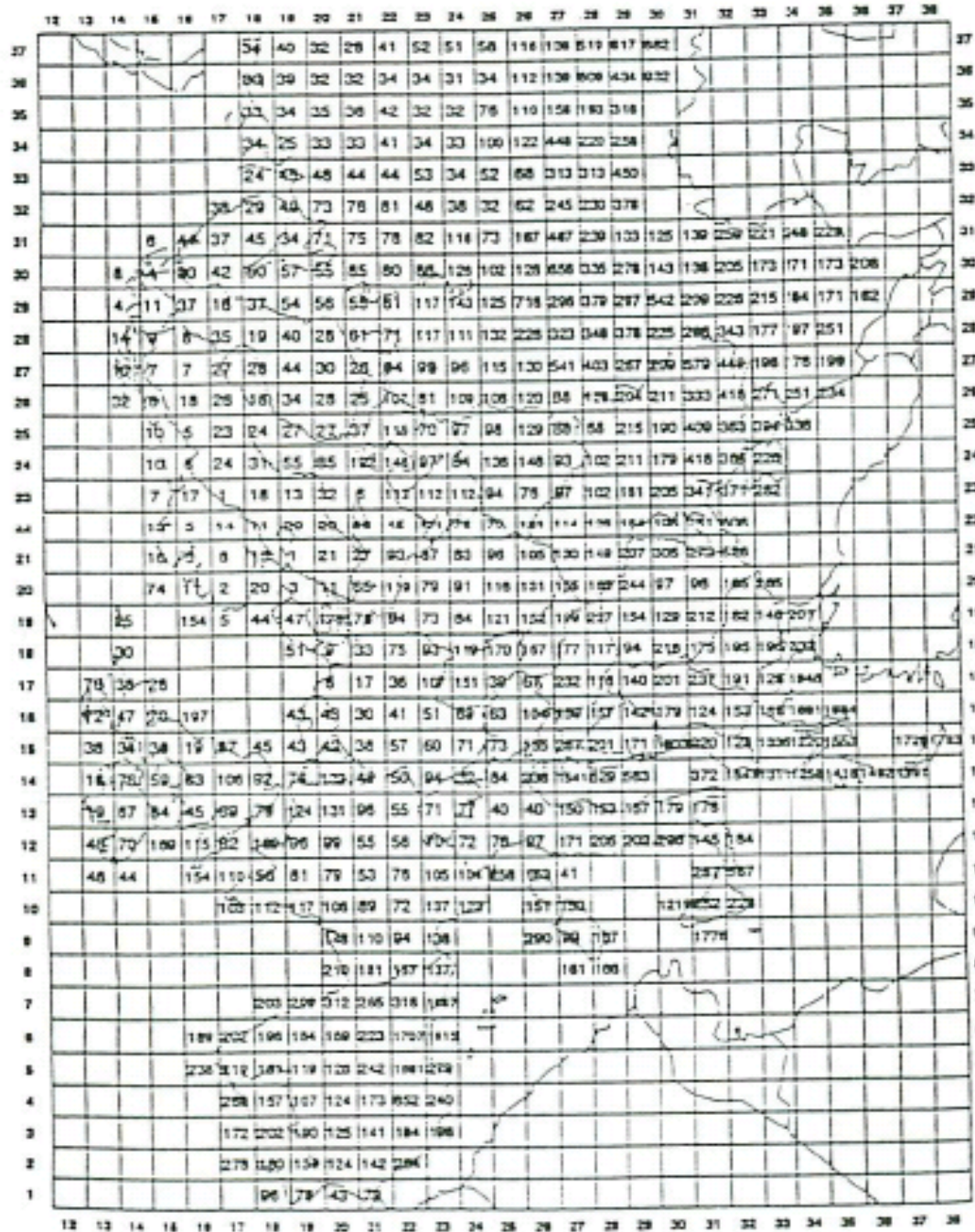
1994 Oslo Protocol (entry into force: 1998)

1999 Gothenburg Protocol (entry into force: 2005)

Major Protocols under LRTAP

LRTAP条約下での主な議定書

| | Protocol 議定書 | Major commitments 内容 |
|------|---|--|
| 1984 | EMEP Protocol | Co-financing for monitoring |
| 1985 | Helsinki Protocol | Reduce national or transboundary sulphur emission by 30% of 1980 level until 1993 SO _x の30%削減 |
| 1994 | Oslo Protocol(オスロ議定書) | Reduce of 60% sulphur emission of critical loads |
| 1999 | Gothenburg Protocol (ヨテボリ議定書) (Multi-effect, multi-pollutant Protocol) | Comprehensive assessment and reduction |



オスロ議定書付属書I
 (限界負荷量地図)

Critical load map (Oslo Protocol, Annex I)

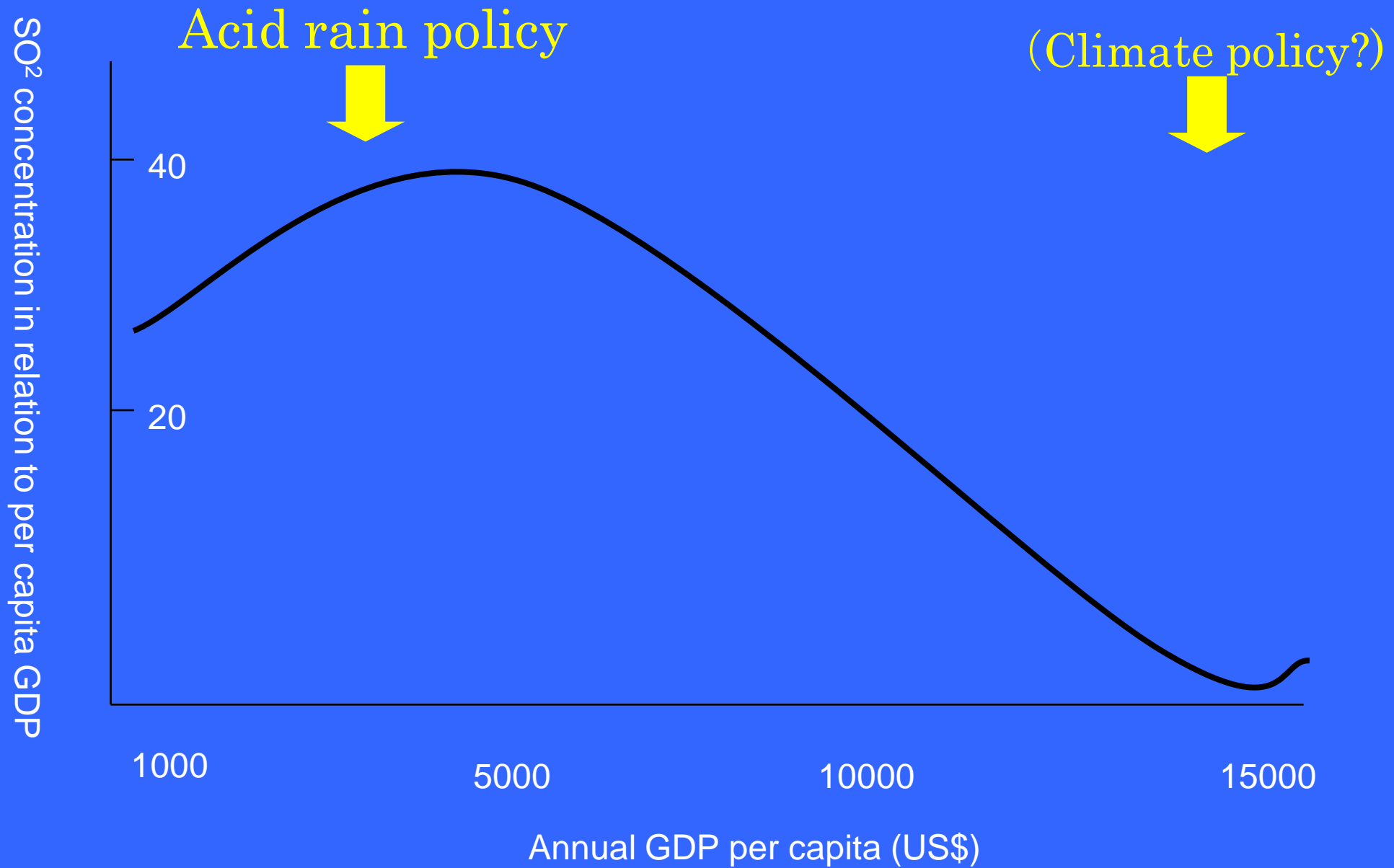
SO₂ emission ceilings by Oslo Protocol

(オスロ議定書によるSO₂排出のシーリング)

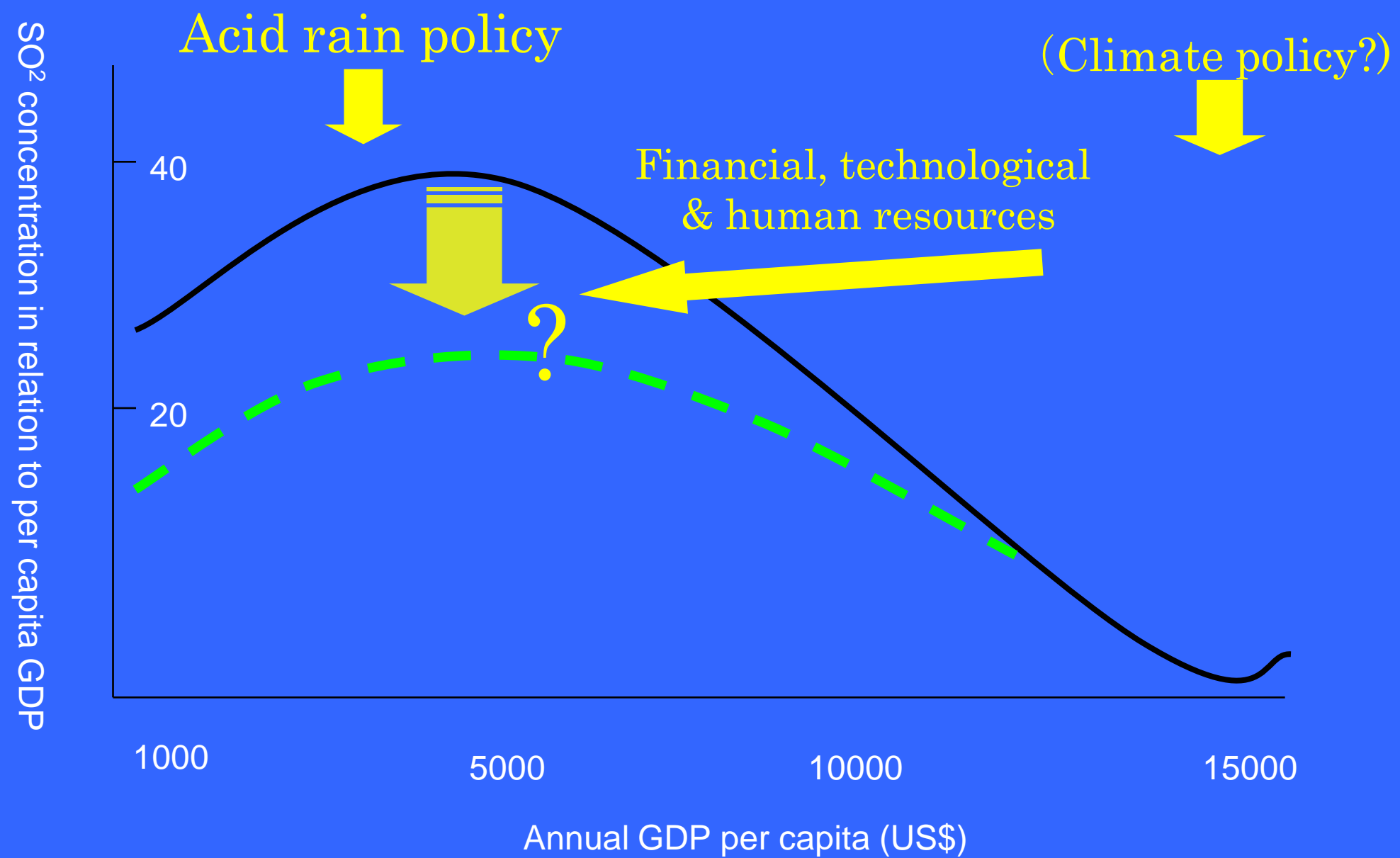
| | SO ₂ Emission (kt) | | SO ₂ ceilings(%: base year 1980) | | |
|--------------|-------------------------------|------|---|------|------|
| | 1980 | 1990 | 2000 | 2005 | 2010 |
| Denmark | 451 | 180 | 80 | | |
| France | 3348 | 1202 | 74 | 77 | 78 |
| Germany | 7494 | 5803 | 83 | 87 | |
| Italy | 3800 | | 65 | 73 | |
| Netherlands | 446 | 207 | 77 | | |
| Norway | 142 | 54 | 76 | | |
| Sweden | 507 | 130 | 35 | | |
| Switzerland | 126 | 62 | 52 | | |
| Russian Fed. | 7161 | 4460 | 38 | 40 | 40 |
| UK | 4898 | 3780 | 50 | 70 | 80 |

Environmental Kuzunets Curve

(環境クズネツ曲線)



Environmental Kuzunets Curve



認識共同体とその機能 (P.Haas, 1992)

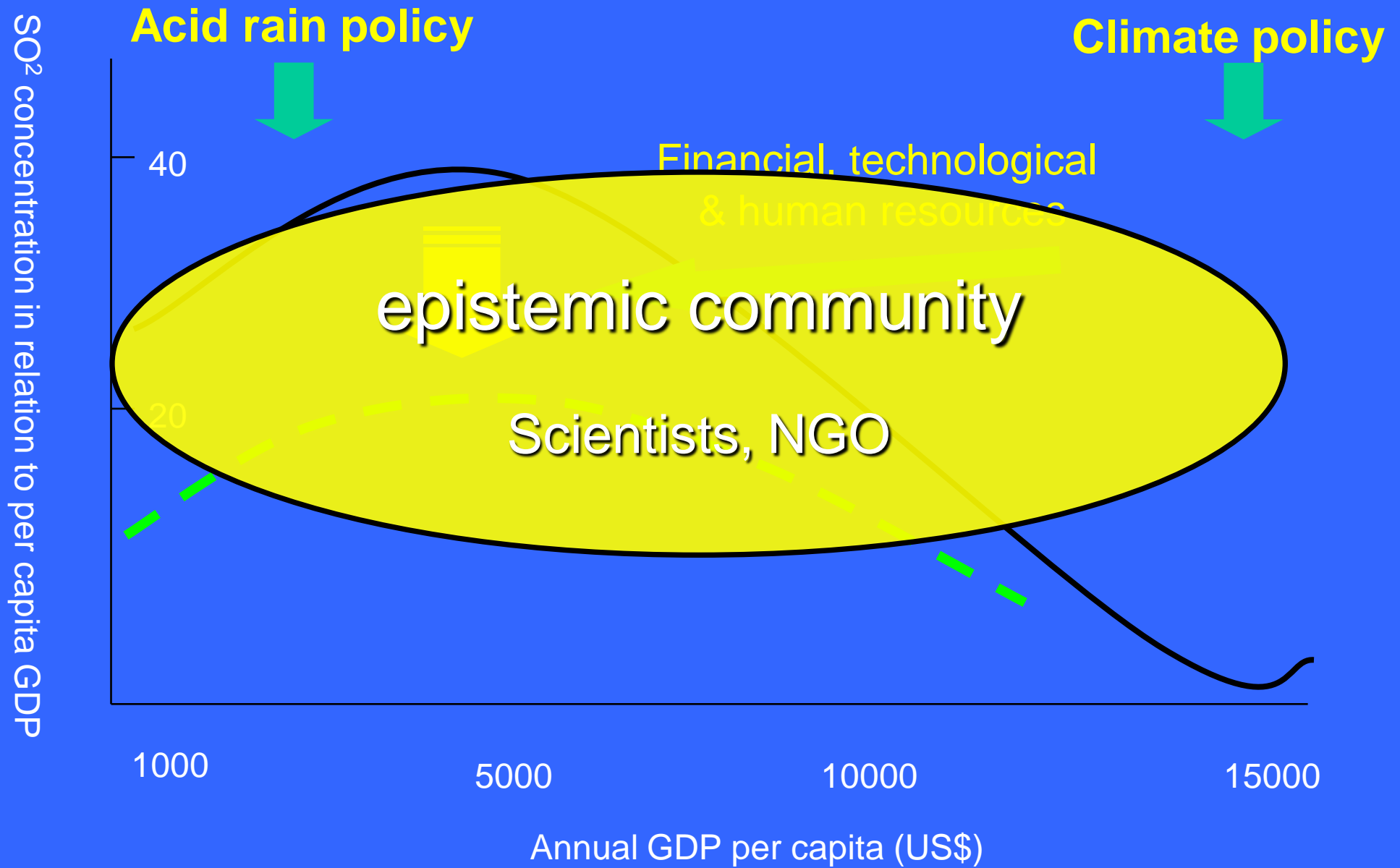
Support to int'l negotiation

Establish and maintain regimes



Advices to domestic policy; informed consensus building

Environmental Kuzunets Curve



Scientific Research Cooperation, First!

Support to int'l negotiation

Establish and maintain regimes



Advices to domestic policy; informed consensus building

Climate change and its security Implications

(UN,2009:気候変動とその安全保障上の含意)

