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Ranking the adaptive capacity of nations to climate change when socio-political goals are explicit

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Abstract

The typical categories for measuring national adaptive capacity to climate change include a nation's wealth, technology, education, information, skills, infrastructure, access to resources, and management capabilities. Resulting rankings predictably mirror more general rankings of economic development, such as the Human Development Index. This approach is incomplete since it does not consider the normative or motivational context of adaptation. For what purpose or toward what goal does a nation aspire, and in that context, what is its adaptive capacity? This paper posits 11 possible national socio-political goals that fall into the three categories of teleological legitimacy, procedural legitimacy, and norm-based decision rules. A model that sorts nations in terms of adaptive capacity based on national socio-political aspirations is presented. While the aspiration of maximizing summed utility matches typical existing rankings, alternative aspirations, including contractarian liberalism, technocratic management, and dictatorial/religious rule alter the rankings. An example describes how this research can potentially inform how priorities are set for international assistance for climate change adaptation.

Keywords: Climate change; Adaptation; Adaptive capacity; National ranking

1. Development, adaptive capacity, and climate change

Development, the economic advancement of a region or people, remains a guiding theme of international relations, especially with respect to multi-lateral and bilateral financial and technical assistance. Since World War II, the goal of achieving development has taken on numerous political, social, and environmental dimensions, including the achievement and protection of individual civil freedom and property rights; the availability of opportunities unconstrained by racial, gender, or other biases; and realization of improvements in quality of life that do not come at the expense of future generations. Development has also been associated with intra- and international integration of capital, financial, labor, and other markets. As the complexities of providing effective international aid are better understood, donor agencies continue to review and refine their practices. One aspect of aid under scrutiny is how one ranks potential recipient nations in light of donors' priorities given budgetary and other constraints. In 2003, the Development Committee, a joint ministerial committee of the World Bank and International Monetary Fund, commented on, among other things, how donor nations should set priorities for aid provision:

> (A)ssistance will have to be better aligned to country need, to country priorities and processes, to countries that demonstrate the ability to achieve measurable development results; and to support the development of countries' capacity (Development Committee, 2003).

Country need, often measured in terms comparable to national weighted GDP, is a common ranking mechanism. Other measures, such as national educational or

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technological achievement, often are closely correlated with GDP in yielding rankings. Two other concepts in the Development Committee passage above are of interest here: capacity and priorities.

1.1. Capacity

Capacity has emerged to encompass a wide range of governmental and private-sector activities, all of which contribute to the achievement of measurable development goals (e.g., increased life expectancy, broader access to education, higher incomes, etc.). Nations have specific adaptive capacities with respect to clearly understood challenges, and generic adaptive capacities to respond to a wider range of uncertainty (see Adger et al., 2004). The WB/IMF Development Committee distinguishes between capacity and actual results, making the implicit connection that the former is a pre-requisite for ongoing achievement of the latter. Capacity studies recognize the path dependency and complexity of social, economic, and political change.

It is the "characteristics of communities, countries, and regions that influence their propensity or ability to adapt" to climate change, according to the Intergovernmental Panel on Climate Change (IPCC, 2001, p. 18.1). Focusing on generic adaptive capacity, its list of factors contributing to national adaptive capacity includes wealth, technology, education, information, skills, infrastructure, access to resources, and management capabilities. Considering the ability to deal with environmental stress, Barnett (2001, 2003) identifies financially strong governments, a vibrant insurance industry, an extensive national communications infrastructure, democracy, and per capita affluence as key characteristics. The IPCC is so certain of the following statement that it turned a sentence into a subheading in its 2001 Summary for Policy-makers: "Those with the Least Resources have the Least Capacity to Adapt and are the Most Vulnerable" (IPCC, 2001: SP 2.8; see also Handmer et al., 1999). Throughout the Summary, the meaning of *resources* shifts between natural resources (e.g., water, fossil fuels) and a broader, multi-modal conception more closely in line with *capacity*. This approach places IPCC thinking squarely in the traditional development framework.

1.2. Priorities

The Development Committee also raises the issue of aligning international aid with "country priorities and processes." Here, scale matters. Considered at the project level, such as whether a national government values a new wastewater treatment facility at city X ahead of a new manufacturing facility at city Y, presumably an incremental cost approach to foreign aid (as practiced by the Global Environmental Facility) can help align the priorities of donors and recipients in least-cost ways. This is likely the intended meaning and, if so, it is consistent with the conception that the success of governance can be measured by the outcomes of development projects. Smithers and Smit (1997, p. 139) also adopt a project-implementation perspective, associating such choices as the location of housing developments with the "intent" and "role" of government.

National priorities can also be construed on a much larger scale, when considered in terms of national aspirations, or broad, self-defining attitudes and goals. Here, economic and social priorities, while responding to contemporary circumstances, also emerge from and are consistent with a broader national identity. If different nations have different aspirations, they will rank priorities differently. Private-sector oriented economic growth combined with liberal democracy, the most common conception of development, is one such aspiration, but there are others, such as theocratic or technocratic rule. The IPCC hints at this idea by noting the importance of national "propensity" to adapt, which could be considered in terms of the extent to which a proposed action is consistent with long-term national goals. Tompkins and Adger (2003, p. 13) are more explicit: in order to understand nations' choices regarding climate change, "(l)ocking into their values and their preferred states of the world is critical." Keeney and McDaniels (2001, p. 989) describe this as "value-focused thinking," in which early attention to national values and goals provides a framework for information needs, identification of alternatives, and selection of modes of analysis. This paper introduces a donor-nation perspective to this general approach to adaptation.

Both donor-nation priorities and recipient nations' abilities to adapt to climate change should take into consideration the recipient's national aspirations. Donor nations may wish to provide funding to nations with a similar broad vision of the purpose of the state. Further, donors may wish to distribute their aid to those nations that show the most promise to achieve goals that are consistent with their aspirations. At a minimum, appreciating a nation's political, economic, and social policies in light of its broader aspirations will make a donor's aid-related decisions more understandable, while also possibly helping to account for successes and failures.

One may ask whether such a thing as a broadly held national aspiration exists or can be identified. One must first posit the existence of a state from which aspirations can emerge. Not all conceptions of the state have this feature. A Marxian interpretation identifies nations as sets of competing class-based interests. Taylor (1992) and Valadez (2001) view states as amalgams of forcibly conjoined ethnic groups, and therefore lacking the moral authority to express a collective will. Here, the