Multiple jeopardies: emerging global rules for climate change adaptation

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Multiple jeopardies: emerging global rules for climate change adaptation

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Introduction

Peter Hayes, Executive Director of Nautilus Institute writes that while "in 2006, we are responding at the 1 percent level of what is needed to address the climate change threat", "no other issue has the ability to bring together so many people and nations as does climate change". Hayes suggests the possibility of

> "a global coalition of interests that transcends national boundaries and historical antagonisms. It is perhaps the first time in history that the poor in the developing countries have a powerful ally among influential citizen groups and even some governments in the developed world. Trans-localism may be a key foundation stone of the new framework."

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Essay - Multiple jeopardies: emerging global rules for climate change adaptation

This paper was first presented at the China-U.S. Climate Change Forum, University of California at Berkeley on 23 May 2006.

Global Climate Change Adaptation Strategies and Equity

When I first visited China, in April 1975, climate change was not on the international agenda, but global environmental issues already were as it was only 3 years after the Stockholm UN Conference on the Human Environment. Already, global environmental monitoring, regional oceans management, international toxic wastes, desertification, and many other issues were negotiated at the UN Environment Programme. American leadership was apparent, both in the governing council; and Chinese participation was strong.

Today, China is a rising power in every dimension of the word-geopolitical, geoeconomic, and geoecological. The United States is a hyperpower of unknown stamina and is playing an unprecedented spoiler role in multilateral affairs, most especially on climate change. This is a startling development for those of us used to constructive use of American power during the Cold War, even given the costs of mistaken interventions and wasted or missed opportunities due to political or bureaucratic bungling.

In the eighties, as a result of analysis of the impact of global nuclear war, we became aware of the risks of global climate change. At the time that this global problem became politically salient-about 1989-states reached a consensus that the right response was to take early anticipatory action to reduce the inevitable, unavoidable impacts arising from past greenhouse gas emissions.

Mitigation Agenda

In the 1990s, after the Climate Change Convention was ratified, the initial focus was on mitigation both because it was held to avoid large future costs, and also because it was fairly "discrete" and therefore "do-able."

Mitigation-related adjustments were found to be relatively cheap, sometimes even negative cost; and often already socially and economically justified, albeit difficult to realize due to institutional resistance, vested interests, and cultural, political, and ideological barriers.

The benefits of local mitigation actions were global, and therefore it seemed that a case could be made for a new international contract to pay for the leapfrogging transition of developing countries from a biomass-intensive to a low carbon future without taking the fossil fuel dominated path of the developed countries.

Indeed, taking mitigation to be the priority, the obligation of the rich versus poor countries to pay for mitigation costs were not hard to define. For example, a group of experts led by Professor Kirk Smith now of this great university and published by UN University over a decade ago proposed a composite indice that included ability to pay on the one hand, and historical contribution to climate

change on the other.

The former ability to pay index addressed the issues of equity and economic realism that will affect participation rates of the poor. The latter historical contribution index embodied the polluter pays principle. It also reflected the practical politics that the poor, small polluters are not likely to constrain their emissions unless the wealthy, big polluters recognize that they have occupied the available 'ecological space' and must compensate latecomers for this pre-emption-or move over and make some room for the late arrivals.

What did this analysis show? The resultant combined obligation to pay index grouped broadly where: The North's obligation-to-pay is about 73 per cent of global cost; the East's about 20 per cent; and the South's about 7 per cent.

What practically did this mean? In a related exercise at that time, these rules were applied to the then-estimated (but with hindsight reasonable) costs of reducing greenhouse gases from those arising from reference emission scenarios to that consistent with then-IPCC defined targets to stabilize climate at non-dangerous levels, that is, roughly 400-420 parts per million of carbon dioxide in 2100. When the costs of each group were derived from the annuitized stream of greenhouse gas reduction costs for each country consistent with the non-dangerous targets derived by IPCC, the nett transfer from the North rich to the poor South countries to make each group's fraction the same as it's obligation to pay was about $30 billion/year-then about the same as overseas development assistance, about twice foreign direct investment. This $30 billion per year is for technological cost only. To this amount should be added a substantial sum to 'kickstart' the sustainable development process by training the scientists and technicians who will be needed to implement an abatement strategy in the South.

These concepts of ability to pay and historic contribution were basically ignored in the rules created to govern allocation of scarce international funds for mitigation in the nineties. Rather, a narrow version of efficiency in resource allocation took hold in the form of the Global Environment Facility's (hereafter GEF) "incremental cost" calculus. Nascent markets for emissions trading and international side payments ("Clean Development Mechanism") that minimized the cost of the biggest, wealthiest polluters were implemented. These were based on efficiency, not equity or accountability for past contribution and/or ability-to-pay. Incremental cost funded only those costs related to incremental global benefits arising from mitigation projects (and later to a range of global benefits).

I still remember the looks of confusion and blank incomprehension on the faces of officials in China, Mongolia, North and South Korea, when I explained that good projects did not meet the GEF project criteria of global incremental cost/benefit only, replicability etc. It all made sense from the viewpoint of maximizing the global benefit arising from expenditure of a very small pot of money.

It made no sense whatsoever relative to the task at hand: moving whole communities, cities, sectors, countries, onto a low-carbon and low greenhouse gas emission trajectory that met their commitments and the needs for sustainable development.

Did ignoring the equity and accountability dimensions of mitigation work? Not really. GEF spent ~$2 billion between 1991-2006 on climate change projects or $133 million per year. It also leveraged another $10 billion for all GEF Projects, so GEF's climate change-related leverage might have increased total climate change funding via GEF to $2-300 million per year. But how much of this, one should ask, was additional, that is, was diverted from existing overseas development assistance flows where GEF conditionality would not have applied?

Roughly, total climate change funding for developing countries might add up to $0.5 billion per year if you add the other multilaterals and bilateral flows, or roughly 1-2 percent of what was needed to mitigate successfully. Perhaps it was the best that could be done as the post-Cold War world flew apart in many directions. But it's worth noting that $30 billion per year pales into insignificance compared with agricultural production subsidies (at the time, $50 billion per year in the EC alone); military spending in the North or the South; or Third World debt (which resulted in a South-to-North net financial flow of $42.9 billion in 1989).

Today, official development assistance is roughly 60$billion; total aid for climate change and other global environmental issues is about $3-6 billion over 2002-6 or about $1-2 billion per year, that is still at roughly 1-2% of any reasonable estimate of needs. (My guess is that the total costs of mitigation have not increased much in real terms due to rapid technological innovation well beyond "autonomous" technological change. Thus, mitigation is likely more affordable, but still far from being funded.)

In short, this parlous funding situation has not changed much today. That this has not happened is a scandal; I don't know a word in English powerful enough to state how scandalous this failure has been. In French, there is such a word, gaspillage. Perhaps there is a similar word in Chinese?

The Emergence of Adaptation

As data accumulate that we are now living in a world of global warming, with more extreme weather events, with many impacts already starting to impose major costs that hitherto were hypothetical in the minds of decision-makers, poor countries pushed hard for adaptation measures to be funded by the rich countries, and for a global "adaptation framework" to be constructed.

Prospective adaptation to climate change impacts will drive much greater, even transformational changes in culture, international and domestic institutions, technological practices, and bio-geographical patterns of human settlements and economic systems.

Adaptation differs to mitigation in that

- Societies have *always adapted* to climate variability in many ways and all sectors. It is difficult to distinguish already existing climate change and adaptation from that driven by anthropogenic contribution to climate change.
- Adapting strategically in anticipation of climate change impacts creates mostly *local* benefits which are harder to justify to international donors as claiming external support whereas mitigation creates a global benefit to everyone.
- Climate change impacts will often impose costs that exceed the locally justifiable benefits of feasible adaptation activities, *thereby transferring potentially huge residual costs* onto precisely those who are least responsible for inducing climate change on the one hand, and least able to pay for it on the other.
- These costs are likely to be much greater than mitigation costs, already unaffordable for roughly half the world's population in poor countries. Whatever support is lent on the mitigation front will be overwhelmed quickly by the costs incurred on the impacts and adaptation front.
- Adaptation related funding from the international community (more below) is much smaller today than even for mitigation.

The New Dog's Breakfast: Adaptation Funding

From 1995-2005, GEF spent about 160 million to enabling activities on vulnerability and adaptation in 140 countries --that is, 16 million$/year, or about $100,000/country per year-barely noticeable.

Post COP 11, we have seen a bewildering proliferation of funds and funding criteria for adaptation. The GEF is now managing 4 funds for adaptation. These are:

1. The pilot program on Strategic Priority on Adaptation (SPA) under the GEF trust Fund itself (the large fund established to generate global and local developmental benefits and utilize the incremental cost principle), that is, across all the GEF foci including biodiversity, climate change, land degradation, international waters, and persistent organic pollutants.The SPA is now moving to pilot or demo projects; and piloting operational approach to adaptation in focal areas of GEF ($30 million) (Kiribati, Caribbean, East Africa, Hungary); coastal zone management in Sri Lanka, West Africa. Overall, there is about $50 million in GEF3, with $5 million for community adaptation projects.These projects are intended to nurture "learning adaptation by doing," and are to develop structured methods to identify climate change vulnerability, adaptation measures, and policy integration as part of national communications by parties to the Framework Convention. This work includes assessing vulnerability and planning adaptation, assessing future risks, formulating strategies, engaging stakeholders, and initiating long term planning.Because it is not possible to distinguish current extremes that create vulnerability from anthropogenically-driven extremes, GEF will support projects in this tranche that deal with current as well as extreme climate change variability, but only on incremental cost reasoning, that is, proportionally to global benefits in one or more of GEF focal areas. Relative to the project baseline, this approach is meant to provide a layer of increasing resilience and thereby robustness of global benefits in the project's alternative scenario.That is, GEF funding will include a *double increment* approach in focal areas; for example, for a biodiversity, GEF will fund incremental costs to address the root causes of biodiversity loss due to current climate stresses, and separate out incremental costs to assess the vulnerability of the biodiversity to climate change impacts, identify adaptation measures, and implement them.The outputs will be projects that enhance adaptive capacity, reduce vulnerability to impacts of climate change, and ensure delivery of global environmental benefits in face of climate change impacts. This logic assumes that climate change is already putting global environmental benefits at risk and that global warming has begun. Such projects are subject to all the other criteria applied to climate change projects in the previous, mitigation dominated startup phase, that is, the projects are to be country driven, fund only the incremental cost for global environmental benefits, are replicable, are sustainable, and involve key stakeholders.
2. The Least Developed Countries Fund (LDCF), created by COP 7, now has about $41 million raised from donors from about 44 countries. In this tranche, there is no need to demonstrate global benefits; rather, projects must show additional cost imposed by adverse impacts of climate change on development goals, to support National Adaptation Plans of Action. These in turn examine capacity building, policy reform, sectoral and project level integration of adaptation measures; and support sustainable development and poverty-reduction strategies. These projects require co-financing (25% for <$0.25 million to 0.8 for >$5million) by recipients.
3. The Special Climate Change Fund (SCCF) was also established at COP 7 to fund adaptation and transfer of technology by meeting additional costs to country, not global benefits. The fund has about $31 million (2004 figures) and separately a GEF allocation of $31 million for health, water governance, mountainous, island region adaptation studies/projects. This funding translates into 20-30 large/medium size projects in all countries. This is total funding, not annual funding. The pilot projects in this tranche are found in Kiribati, the Andean region, Ecuador, and in a range of community-based projects implemented by UNDP.
4. A new fund, the Adaptation Fund, will get funds from a small share of Clean Development

Measures under the Kyoto Protocol and will finance "concrete adaptation projects and programmes." As rules for operation of sales of carbon emission reduction are still being worked out, it is not yet clear what this fund will be able to do. But based on collecting 1-2% of forecast CER sales, this fund might amount to $20-50 million per year by 2012.

Overall, these four funds will deliver around $147-177 million total, not per year. Over the next 6 years, this funding might amount to $20 million/year for all countries. If we add other bilateral and multilateral donors, the funding might be $50 million/year.

None of these schemes are based on accountability or equity-simply efficiency. The climate change resilience-oriented development funding is moving in right direction, but it is unclear what will move more money into development financing, whether climate friendly or not.

Multiple Jeopardies

On mitigation, the international funding has created a fairly systematic accounting of what could be done in poor countries; very little actually was done with international assistance.

On adaptation, activities funded by the international community has barely scratched the soil, let alone tilled, seeded, fertilized, weeded, watered, and harvested projects. Yes, there are 45 countries working on NAPA projects; yes, there are demonstration and pilot projects. But at these funding levels, there is a huge shortfall. At best, the international community is creating parts of a framework; and aligning perceptions and broadening understandings. 99 % of the work remains untouched, and in next decade, let alone generations, it is prudent for most countries to assume that they are on their own, or working via coalitions and partnerships, as if rest of world is not engaged. Given this lackadaisical response, most countries will not mitigate enough to curtail emissions to levels that will force safe levels of change. Therefore, it seems prudent to base planning on higher rather than lower levels of climate change, including dangerous and extreme climate change, as the basis for adaptation planning.

The main game is shifting from mitigation to adaptation. In this world, the poor are subject to *double, triple and even quadruple jeopardy*. First, they are subject to the grinding effects of daily poverty which reduce resilience and adaptability. Second, they face displacement and disruption due to the impacts of globalization on work, home, community, and environmental services. Third, they often live in areas that are conflict-prone or actual conflict zones, in states that are near-collapse or over-whelmed by internal or regional conflicts. Fourth, they must contend with new risks of climate change impacts that are superimposed on the first three jeopardies, on health, land use, insurance, degraded disaster response capacities, and food insecurity.

The rich countries also find themselves increasingly vulnerable to climate change-but perhaps only 10-20 percent of the US economy is directly affected by climate change today. In many poor countries, the economy is far more vulnerable to climate change impacts. Also, much of the losses in the United States from extreme weather in the 1990s (roughly 40 percent) are insured, whereas in poor countries, most of the losses (roughly 95 percent) are not. The economic impacts of climate change may induce changes in political regime in these latter countries that could also trigger political risk such as expropriation or nationalization of assets, accelerating vicious circles of under-development in poor countries.

We actually have a real world example of what happens to a high carbon society when the system collapses in extreme climate scenarios, for example, in the energy sector, via blackouts due to heat waves, storms disrupting offshore oil rigs, coastal zone oil infrastructure, pipelines; reduced hydro and barge transport; shutdown of cooling systems of power plants due to warmed inland water;

lightning strikes disabling transmission systems. Just look at North Korea.

What to do?

Can markets fill the resources gap? Some bet that markets in carbon reduction will save the day, assuming that emission reduction will become valuable property that can be traded. This may be correct one day for mitigation, but it is not at all clear what markets can deliver in the adaptation field. One possibility is that cities sell mitigation credits in own public operations and assets, and direct these revenues to city-based adaptation strategies.

The first important step is to recognize that climate change already affects development, for example, via glacial outburst flooding with downstream or future impacts on hydropower, flooding, shortfall in irrigation water, etc. Roughly 50-60 percent of existing official development assistance projects is already sensitive to climate impacts, and should be reviewed with this imperative in mind because both this assistance and for the most part, the development policies and strategies that are thereby supported, neglect current and future climate variability.

Second, long-lived infrastructure being built today needs to be designed with a view to long-term climate change. In short, we should build infrastructure looking forwards not backwards. The 100 year flood design guideline may now need to be upgraded to a 1000 year flood rule.

Third, it is very important that the Global Environment Facility be expanded and its governance structure revisited to reflect the interest of many stakeholders in how its resources are expended. But this reformation should not be limited to the World Bank, but should extend also the World Bank family. The Bank needs to play a leading role in developing post-Kyoto Protocol strategies, investment frameworks with private commercial stakeholders that strengthen its own clean energy and finance adaptation projects. It also needs to use its funding leverage facilitate the wholesale shift of national economies to low-carbon, climate-friendly development. Needless to say, the Bank also needs to adopt a systematic procedure to appraise the climate dimensions of all Bank projects which is still done on an ad hoc and largely haphazard basis. In short, the Bank needs to be able to show that it has cleaned up its own greenhouse gas act as well.

Fourth, in addition to strengthening the various funding mechanisms, it is critical to build on the foundations already laid by the UN Development Programme and other specialized development agencies working on many facets of climate-related and climate-sensitive fields. UNDP needs to be endowed with far greater resources to capitalize on its devolved structure with national field offices, over 400 professionals working on sustainable development field in 140 countries and already using 30 full-time climate change staff. UNDP creates grounded communities-of-practice in twenty areas such as democratic governance, poverty reduction, crisis prevention and recovery, energy and environment, development goals, human development reports, etc, and climate change adaptation needs to be interwoven into each of these.

Fifth, all these institutions should be aiming above all to mainstream climate change adaptation into development strategies. Poor countries, indeed all countries, face institutional barriers (especially corruption), are overloaded with competing agendas, are driven by short-term horizons, vested interests, and seemingly more urgent imperatives than what is perceived still to be uncertain climate change hazards. At a technical level, countries also need versatile, powerful strategic tools to screen policies and projects for climate change risks, to identify entry points and networking strategies for climate-related information, pathways to focus on implementation barriers, greater transboundary and regional coordination and cooperation, and much more attention to rapid replicability and transfer of new techniques and technologies than in the past. Achieving these outcomes may entail accepting some costs in intellectual property and other trade regimes and adjustment and

compensatory schemes to enable these changes to occur.

Finally, it is essential that the capacity of civil society to respond to climate change be strengthened. A good example of what can be done on slender resources is the ring or network ring or network of local institutions directly involved in exchanging experience and best practice on climate change adaptation in South Asia, West Africa, East Africa, and Southern Africa, and coordinated by the International Institute for Environment and Development in London. This activity involves about four counterparts in each region (one per country) plus four international partners. The initial focus is on health-related climate-driven adaptation in the twelve participating countries of these regions. Activities focus on building civil society organization capacities; research on assessing grass roots adaptive activities and capacities in various sectors (coastal, water mgt, disaster preparedness, health, agriculture, and forestry). These organizations feed the results of their explorations into national and international decision making.

Conclusion

In 2006, we are responding at the 1 percent level of what is needed to address the climate change threat. What could possibly mobilize resources on the scale needed by the Earth's climate system to avoid dangerous, irreversible climate change?

This question can be recast. No other issue has the ability to bring together so many people and nations as does climate change. The negotiations that will ensue over the coming years to create a global greenhouse regime that works are a rare opportunity to form a global coalition of interests that transcends national boundaries and historical antagonisms. It is perhaps the first time in history that the poor in the developing countries have a powerful ally among influential citizen groups and even some governments in the developed world.

It would be unrealistic to expect that more of the same will lead to the resource mobilization needed for the institutional growth outlined above. What will move societies to respond at the 80 or 120 percent level? Globalization has facilitated the rise of provincial and local governments, especially cities, as well as powerful diasporic networks, as potent players on the world stage. This dynamic is a possible source of rapid change and resource mobilization across national borders based on need and human solidarity rather than narrow national interest.

There is no precedent for this bottom-up shift in power and connectedness between these communities and therefore no way to know how influential and how fast these communities and networks can mobilize resources. If a significant fraction of the world's poor and rich cities decide to create their own compact to tackle adaptation, for example, the post-Kyoto framework may look very different to the current-state dominated Climate Convention. Trans-localism may be a key foundation stone of the new framework.

If social movements insist on regulatory frameworks that move markets to innovate on a large-scale to exploit the convergence of the massive and accelerating scientific and technical change in IT, nanotechnology, and biotechnology, and the application of these results to climate mitigation and adaptation imperatives, then multinational corporations may replicate these standards globally far faster than any international agreement could engender. Thus, bottom-up reconstitution of market standards may be a powerful mechanism working in favor of resource mobilization.

In short, only an unprecedented and unpredictable swarming of thousands and millions of acts of solidarity across borders of all kinds whereby fearless leaders take necessary risks at all levels to achieve the necessary levels of change will we be able to respond effectively.

Finally, let me make some suggestions on US-China cooperation.

1. The United States and China should establish high-level and working-level policy collaborations and dialogs concerning climate change adaptation, taking up concurrent challenges of acid rain, yellow dust and dust storms transporting persistent organic pollutants etc across the Pacific to west coast of North America and the Arctic. Such cooperation is not a substitute for other cooperation on urgent security issues such as evolved over nuclear weapons proliferation in East Asia in recent years. Indeed, climate cooperation may make such security dialogs more productive and easier to conduct.
2. China should develop and then demonstrate green development based on new kinds of large-scale human settlement that are organized around recycling, zero waste, distributed energy production, virtual mobility, and public goods such as public transport.
3. China should take a leading and constructive role, not just a blocking role, in the negotiations over post-Kyoto multilateral climate frameworks. No-one can substitute of Chinese leadership in at a global level. In this regard, China stands to gain a green reputation during its climate change driven transition to sustainability that rests on a new development model rather than coercive power.

Thank you for your attention.

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Nautilus invites your response

The Austral Peace and Security Network invites your responses to this essay. Please send responses to the editor, Jane Mullett: austral@rmit.edu.au. Responses will be considered for redistribution to the network only if they include the author's name, affiliation, and explicit consent.

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