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**TESTIMONY OF JONATHAN LASH**
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**HEARING BEFORE THE UNITED STATES SENATE**
**COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS**
**"LEGISLATIVE HEARING ON S. 1733,**
**CLEAN ENERGY JOBS AND AMERICAN POWER ACT"**

**OCTOBER 29, 2009**

# "Getting to Yes on Climate Change – Action of Other Countries"

Good afternoon and thank you for inviting me to testify today regarding the pending legislation, action of other countries to address climate change, and the implications of their action for the United States.

I am Jonathan Lash, president of the World Resources Institute. WRI is a non-profit, non-partisan environmental think tank that goes beyond research to provide practical solutions to the world's most urgent environment and development challenges. We work in partnership with scientists, businesses, governments, and non-governmental organizations in more than seventy countries to provide information, tools and analysis to address problems like climate change, and the degradation of ecosystems and their capacity to provide for human well-being.

I have a single message to deliver today: The time is ripe for Congress to enact climate legislation to reduce emissions, establish energy security, and create new jobs in clean energy. Other nations are moving; the outcome depends on us.

We need global action to solve this global problem. Those who have worried that the United States might act alone need worry no more. The worry should be that without us, the rising global effort will falter. The worry should be that if we hesitate, we will miss the opportunity to lead the coming clean energy revolution.

**With other nations acting, U.S. action now can make the critical difference.**

Other countries across the globe are moving to take action to confront global warming. This has transformed the debate over this issue. The time is ripe for the United States to act and it is in our own interest to act promptly. In a nutshell, there are three reasons for this:

- Action by other countries increases opportunities for the United States if we are prepared to seize these opportunities.
- Steps by other countries help ensure that the United States will not be disadvantaged by taking action itself.
- Action by the United States is essential to cement an agreement under which all countries commit to continue and increase the steps they are taking.

In order to take action, we need a better understanding of what we are facing. We need to understand the opportunities. We need to put aside old myths. We need to focus on the real problems and recognize the solutions to those problems. And we need to get busy so we do not miss this opportunity.

**A changed landscape**

As illustrated by Figure 1, almost 80 percent of global emissions are produced by fifteen countries (counting the European Union as a single country). A majority of these are developing countries, which, until recently, said they would not take action on emissions without clear action by wealthy countries. At the same time, all countries have recognized that the poorest would need assistance in deploying clean energy and preserving forests and also in adapting to minimize the damage from changes in the climate that are no longer avoidable. What has changed is that in the last couple of years, and even in the last few months, without waiting for rich nations to act, countries such as China, India, Brazil, Mexico, and South Africa are stepping forward with significant proposals and actions.[1]

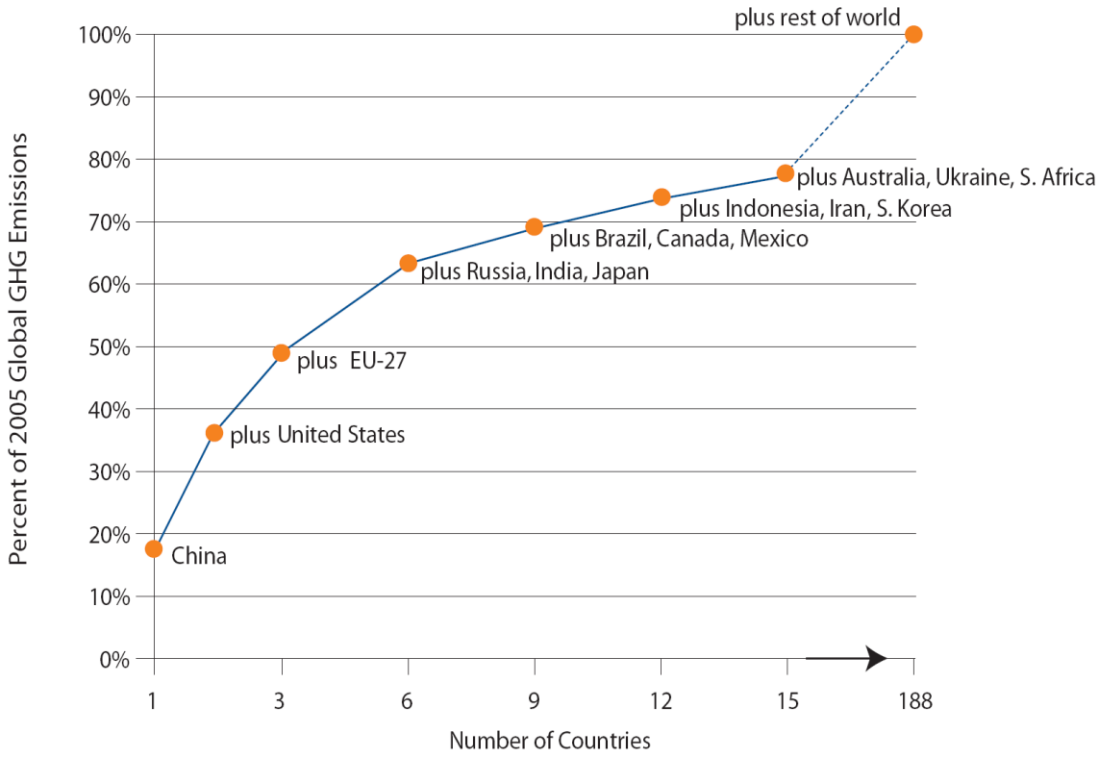
As explained below, China provides an important example among developing nations, but China is not alone. Mexico has pledged to halve its greenhouse gas emissions by 2050, employing a "cap-and-trade" policy like the one under consideration in the U.S. Congress. South Africa has presented a detailed plan to peak its national emissions by 2020. India has defined eight national missions in efficiency, renewable energy, and sustainable agriculture and ecosystems and is developing strategies in these areas. Recently, the Indian government announced it will offer new legislative proposals to tighten fuel efficiency standards and pursue other clean energy targets, and there have been indications of increased willingness to subject its actions to review. Deforestation accounts for about two thirds of Brazil's greenhouse gas emissions. Brazil has said it would reduce its deforestation rate 70 percent from recent levels by 2017.

Among developed countries, a new government recently came to power in Japan, transforming that country from a laggard to a leader with an ambitious proposal to reduce emissions 25 percent below 1990 levels by 2020 if other major countries take ambitious action. The European Union position is that it will reduce its emissions by 20 percent regardless and by 30 percent if other developed countries take sufficient action. And Australia, heavily dependent on coal for

[1] *See* annex to this testimony, "National Climate Change Strategies" (WRI June 2009). New measures are emerging almost daily. See, for example, Rie Jerichow, "India and China sign major agreement on combating climate change." Oct. 21, 2009, http://en.cop15.dk/news/view+news?newsid=2400. For the text of the India-China MOU, see http://moef.nic.in/downloads/public-information/India-China%20Agreement%20on%20Climate%20Change.pdf.

consumption and exports, has said that it will cut its emissions by 25 percent below year 2000 levels if others take on similar actions.

**Figure 1: Aggregate GHG Emissions by Country, 2005**




Sources & Notes: WRI, CAIT. Percent contributions are for year 2005 GHG emissions only. Moving from left to right, countries are added in order of their absolute emissions, with the largest being added first. Figures exclude emissions from land-use change and forestry and bunker fuels. Adapted from Figure 2.3 in Baumert et al. (2005).

The ball is now in our court, and it is in our interest to act. In December, the nations of the world will meet in Copenhagen, Denmark to try to reach agreement on plans to confront climate change. In order to reap the benefits of an agreement, we need to bring something credible to the table. That something is what this committee and this Congress write into legislation.

Let me explain what is at stake by focusing on China. China is a country taking action and looking at China helps us understand the problems, solutions, and opportunities before us.

**The case of China**

Some people have worried that action by the United States on climate change could put us at a competitive disadvantage if countries like China do not also take action and produce at lower cost. In fact, China *is* taking action, which can help assure that there is a level playing field. As I will explain, they are doing this because it is in their own interest, which should give us confidence they will continue. Instead of more delay, we should get an agreement that helps

further to ensure that Chinese action on climate will continue and increase. But there is more. Not only should we lock in a commitment; we should work with China to reap the benefits of the new economic future emerging in the worldwide shift to clean energy.

Here are the facts. In 2005, realizing its growth in energy consumption was unsustainable for energy and climate security reasons, China launched a plan to reduce energy intensity 20 percent from 2005 levels by 2010. This may be the largest greenhouse gas mitigation program of any country. China also plans an increase in renewable energy to 10 percent by 2010. In 2007, China was second in the world in funds invested in renewable energy.

China, like the United States, is a major user of coal. However, China is closing inefficient coal plants, deploying state-of-the-art or better technology, and exploring carbon capture and storage (CCS) technology. These efforts can help improve coal technology and bring down the costs. U.S. – China collaboration on development of CCS and other coal technologies is already underway and opens vast opportunities.

At the Major Economies Forum in July, China and India for the first time agreed at the international level to a declaration to take action to meaningfully reduce emissions below business as usual, peaking as soon as possible. Also, they recognized the scientific view that temperatures should not exceed 2 degrees Celsius above pre-industrial levels.

In the first-ever speech by a Chinese President to the UN General Assembly in September, 2009, President Hu Jintao said China will reduce its carbon intensity by "a notable margin" by 2020.

**Why are they doing this? – "All politics is local."**

China's aggressive action to improve energy efficiency and reduce emissions is not an act of global charity. China's leadership realizes they cannot maintain growth and reduce poverty without conservation of resources. Pollution is choking off growth and producing social unrest. Adverse impacts from climate change are projected to undermine agricultural productivity and cause flooding in south China and along the coasts.

Qi Ye, deputy director of the China Sustainable Energy Program in Beijing says you have to "address the global issue in terms of local need" because people act on what they care about. Similar sentiments can be heard in other developing countries. In describing India's new initiatives on clean energy, the Indian environmental minister said recently, "I want to be aggressive, because, frankly, we are a country that is climate dependent" because of rising seas and monsoons. "We may not have caused the problem, but we have to be part of the solution."

**How do we know they're doing what they say? "Trust but verify."**

Self interest in taking action to confront climate change affords us some confidence that countries like China will follow through. Still, challenges remain. Reliable data are not always available and standards of enforcement, governance and transparency are variable. This is one of the reasons it is in our own interest to establish an international climate agreement. A key

element in the negotiations is creation of a system for measuring, reporting, and verifying actions to give confidence that promises are being kept and action taken.

Just as President Reagan suggested to Soviet leader Gorbachev in signing the nuclear arms reduction treaty and quoting the Russian proverb "trust but verify," trust is fine, but real confidence depends on verification.

Verification of China's action to reduce emissions will be feasible. China participates in peer review and verification already under international agreements like the WTO and the Montreal Protocol to address ozone. The U.S. Environmental Protection Agency has worked with China in successful efforts to improve its control of sulfur dioxide emissions. China has already begun collecting and verifying energy data. Moreover, the United States could invest in satellite tracking as an additional way to help check up on whether China is meeting its commitments.

**China and the United States – solving problems, seizing opportunities.**

Some people have worried that China would steal American jobs by competing using dirty production processes. The reality is China is pulling ahead of us by being innovative and clean. If doubts remain, a global climate agreement can allay them by ensuring action by all that will help level the playing field. As a fallback, the House-passed climate bill protects energy-intensive U.S. industry by providing free allowances to comply with cap-and-trade, in the form of output-based rebates. When the rebates phase out a decade from now, the president is authorized to impose border duties if action by China and other countries has not done enough to level the playing field.

In September 2009, *The Wall Street Journal* said that a group of Western firms published a report anticipating a $500 billion to $1 trillion market annually in China for clean technology. In August and September, America's third largest coal fired electric utility, Duke Energy Corp., announced agreements to explore clean energy and carbon capture projects with Chinese companies. In July, the U.S. and Chinese governments signed an MOU for joint research collaboration.

The opportunities are there in the vast Chinese and global markets and in collaboration with the Chinese and others in the private and public sectors. But to take advantage of the opportunities, the United States will have to get its act together to promote clean energy. We risk falling behind if we don't move forward. Climate legislation is key because, by putting a price on carbon, it shifts investment into clean energy. The pending legislation also contains important new financial support for clean energy development, clean technology exports, and carbon capture and storage technology. Additionally, it creates economic opportunities in international carbon trading.

**Getting it in writing – U.S. legislation and a global agreement.**

Now what we need is a global agreement, confirming and strengthening the new trajectory of China, India and others. To realize the benefits of a global agreement, the United States needs to take action – better yet, take action and take the lead – to make the global agreement possible.

Both warming and the emissions that cause it are global. The economy, trade, and competition are global. A global agreement provides a basis on which countries can act with some confidence that others will do so as well. It can address issues of verification, competitiveness, and fairness, and it can create new opportunities for collaboration on clean energy.

In order to get that global agreement, Congress needs to take action on climate legislation so our negotiators can go to the negotiating table with what the United States will do – what emissions reductions we will achieve and what assistance we will provide to help less developed countries shift to clean energy and adapt to climate change.

U.S. negotiators have made clear that they will not commit the United States to greenhouse gas reductions and other critical points without a clear expression of political will by Congress. At the same time, other countries have expressed understandable reluctance to complete an agreement without a commitment from the United States. Thus, until Congress acts on U.S. legislation, the world cannot reach final agreement.

Only if all nations come forward with what they propose to do is agreement possible. The question is no longer whether others will act. They are acting. The question is whether we will act. The point is no longer that global warming cannot be addressed without those other countries. The point is that it cannot be addressed without this country and that we cannot gain the benefits of leadership unless we enact climate legislation.

Then we can not only avert the threat of dangerous global warming; we can reap the benefits of new jobs, economic growth, and energy security in the age of clean energy.

The United States has led the world through great economic and social changes and has thrived by doing so. This is an occasion and an issue on which the world again needs that leadership.

## ANNEX

# NATIONAL CLIMATE CHANGE STRATEGIES:
# COMPARATIVE ANALYSIS OF DEVELOPING COUNTRY PLANS

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| | INDIA | BRAZIL | CHINA | MEXICO | SOUTH AFRICA |
|---|---|---|---|---|---|
| | **National Action Plan on Climate Change (NAPCC)** | **National Plan on Climate Change (PNMC)** | **National Climate Change Program** | **Special Program on Climate Change (PECC)** | **Long Term Mitigation Scenarios (LTMS)** |
| **Issuing entity** | Prime Minister's Council on Climate Change, July 2008 | Inter-Ministerial Committee on Climate Change, December 2008 | National Development and Reform Commission, June 2007 | Inter-Secretarial Commission, March 2009 (review draft) | Cabinet of South Africa, July 2008 |
| **Stated objective** | To establish an effective, cooperative and equitable global approach based on the principle of common but differentiated responsibilities and relative capabilities; to identify measures that promote development objectives while yielding co-benefits for climate change. | To identify, plan, and coordinate the actions and measures that can be undertaken to mitigate GHG emissions in Brazil, as well as those necessary for the adaptation of society to the impacts that occur due to climate change. | To make significant achievements in controlling GHG emissions; to enhance the capability of continuous adaptation to climate change; to promote climate change related science, technology and R&D to a new level; to raise public awareness on climate change; and to further strengthen institutions and mechanisms on climate change. | To develop and solidify guidelines contained in the previously released National Strategy on Climate Change (ENACC); to demonstrate that it is possible to mitigate and adapt to climate change without compromising development, while reaping economic benefits. | To produce a sound scientific analysis from which Cabinet could draw up a long-term climate policy; to give South African negotiators under the UNFCCC clear and mandated positions; to ensure that South African stakeholders understand and commit to a range of realistic strategies for future climate action. |
| **Process for development** | Plan developed by a special council appointed by the Prime Minister. Efforts began in 2007. Council includes ministers, government officials, scientists, civil society and business, but has met infrequently. As of 2009, strategies to advance the eight missions identified in the plan are being developed by ministries, agencies and consultants. The need for further stakeholder engagement has been recognized. | President initiated PNMC in April 2007 on the recommendation of the Ministry of Environment and Brazilian Forum on Climate Change. In November 2007, President appointed Inter-Ministerial Committee on Climate Change (CIM) to oversee Plan. CIM surveyed ministries to identify actions that could be incorporated and solicited input through a stakeholder consultation process. Initial version released for public comment in September 2008; criticized for lack of clear goals. Revised version released December 2008. | China was the first major developing economy to issue an action plan. Process was led by the National Development and Reform Commission, with input from leading universities. Chinese Vice Premier Zeng Peiyan and State Councilor Tang Jiaxuan now head a National Coordination Committee on Climate Change, which includes 17 ministries and agencies, to orchestrate climate change policy. | Inter-Secretarial Commission on Climate Change (CICC) formed in April 2005. CICC prepared ENACC, presented by President Calderón in May 2007, who ordered development of the PECC based on ENACC and the National Development Plan (PND). 17 sectoral reviews fed into PECC. An initial draft was published in July 2008 and was subsequently revised based on a new set of GHG mitigation scenarios. | Commissioned by Cabinet in 2006; Department of Environment and Tourism tasked to develop plan. A "Scenario Building Team" was set up, including research institutes, business, and civil society. |

**June 2009.** *Compiled by Taryn Fransen, Smita Nakhooda, Eric Chu, and Heather McGray. Contact Taryn Fransen: tfransen@wri.org.*

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| **GHG emission scenarios framing plan** | Notes that there is evidence of climate change, and references the IPCC reports. Makes a commitment that Indians' emissions per capita will not exceed those of people in developed countries. | Cites the IPCC as scientific consensus that anthropogenic climate change is occurring. Presents national emissions data from 1994. States that Brazil has contributed little to the problem (in terms of comparative per capita and per area emissions). Mentions that Brazil will not wait for others to act to mitigate climate change, and characterizes its actions as ambitious relative to those of others. Frames actions in the plan in terms of contribution to efficiency of the economy. | Makes reference to IPCC and Stern reports to confirm the need for early action on the part of all countries to reduce emissions. Notes that emissions intensity is falling. Emphasizes China's right to development, and the need to consider developing country emissions on a per capita basis. | Presents national emissions data from 2006. Establishes long-term vision, including national GHG reduction target of 50% below 2000 levels by 2050. Target stems from OECD estimate of maximum annual global and per capita emissions compatible with 450 ppm by 2050. Notes that Mexico's emissions need to peak by 2012 to meet target. Considers cost curve analysis identifying low- and no-cost actions. States that reaching target depends on international support. | Developed with reference to emission scenarios if growth were "not constrained," and emission levels "required by science" to prevent climate change. The actions identified in the LTMS are to reduce emissions to the levels required by science. |
| **Overview and scope** | Defines eight national missions: Solar, energy efficiency, sustainable habitat, water, Himalayan ecosystem, green India, sustainable agriculture, and strategic knowledge. Outlines institutional arrangements to achieve missions. Addresses adaptation as well as mitigation. | Covers energy (renewable/clean energy, biofuels, consumption reduction, oil and gas); forests and agriculture (ecosystem conservation, agriculture and ranching, strengthening sinks); and other sectors (industry, waste, transport, and health). Plan lists 32 activities in implementation and 13 activities in the "conception phase." Addresses mitigation, adaptation, R&D, and education and communication. | Covers energy production and transformation, energy efficiency, industrial processes, agriculture, forestry, and waste. Addresses mitigation, adaptation, science and technology, public awareness, institutions and mechanisms, and international cooperation. | Covers energy generation; energy use; agriculture, forests, and other land uses; waste; and private sector. Contains 41 mitigation objectives and 95 related targets. Targets are framed in terms of both quantitative and qualitative metrics. Most have a 2012 deadline; some are framed in terms of GHG reductions. An annex identifies responsible agencies and strategies. Addresses mitigation, adaptation and cross-cutting policy. | Identifies measures to reduce emissions and adapt: activities to "start now" as they will save money over time; measures to scale these actions up with additional resources; tax and incentive packages; and parallel options, e.g. behavioral changes and generation technologies. Considers energy and non-energy emissions, macro-economic analysis, and climate impacts. Addresses mitigation only. |

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| **Examples of proposed mitigation interventions** | *Energy generation/use*<br>• Increased deployment of solar PV; 1,000 MW of concentrating solar thermal power<br>• Energy efficiency in industries, small enterprises, energy production, residential sector<br>• Promotion of ESCOs and retrofits<br>• Regulate power tariffs for irrigation<br>• Retire or rehabilitate 10,000 MW old capacity<br>• RD&D of supercritical coal<br>• Promote nuclear power (closed cycle technology)<br>• Exploit hydropower potential (large, medium, micro)<br>• Explore dynamic minimum renewables purchase standard starting in 2009-10<br>*Transport*<br>• Urban public transport<br>• Transport pricing reform and higher regulatory standards<br>*Forests*<br>• Expand forest cover to 1/3 of country's area<br>• Additional afforestation programs | *Energy generation/use*<br>• Add 7,000 MW of renewable energy from bagasse cogeneration, mini-hydro, and wind; increase bagasse cogeneration to 136 TWh (11.4% of energy mix); add 34,460 MWh from hydro<br>• Solar water heating to reduce energy needs by 2200 GWh/year<br>*Transport*<br>• Increase share of rail and water transport; improve mass transit, bicycling, and river cargo<br>*Forests*<br>• Reduce deforestation by 40% by 2009, and an additional 30% by 2013 and 2017; eliminate illegal deforestation<br>• Complete a carbon stock inventory and national public forest registry<br>• Eliminate net loss of forest cover including by doubling area of forest plantation to 11 million ha by 2020, and increasing annual planting<br>*Waste*<br>• Recuperation of methane from landfills<br>• Increase urban solid waste recycling by 20% by 2015 | *Energy generation/use*<br>• Reduce energy consumption per unit GDP by 20%<br>• Accelerate institutional reform<br>• Foster bioenergy and renewables, including wind, solar, geothermal and tidal<br>• Develop hydropower resources<br>• Promote nuclear power<br>• Ultra-supercritical coal, methane bed, and mine methane technology<br>• R&D for efficient coal mining, oil and gas exploration and use technologies<br>• Improve efficiency standards, programs and implementation<br>• New financing mechanisms and tax policies to promote energy savings<br>• Most efficient technologies for iron and steel; cement; oil and petrochemical; agricultural machinery industries | *Energy generation/use*<br>• Design and operate a carbon market between para-state companies in the energy sector<br>• Reduce emissions from natural gas injection<br>• Enhance cogeneration<br>• Promote natural gas projects<br>• Promote additional investment in renewable energy<br>*Transport*<br>• Increase the share of rail in cargo transport<br>*Agriculture*<br>• Improve pasture management<br>*Forests*<br>• Promote sustainable forest management<br>• Design, pilot and implement REDD projects<br>*Waste*<br>• Reduce emissions from landfills | *Energy generation/use*<br>• Accelerated energy efficiency and conservation across all sectors<br>• Mandatory energy efficiency targets<br>• Align response to the electricity crisis with LTMS<br>• Explore carbon pricing mechanisms<br>• Diversify energy mix away from coal; promote cleaner coal<br>• Feed-in tariffs<br>• Targets for renewable and nuclear energy<br>• Explore CCS and coal-to-liquids (consider phase-out of coal plants without CCS)<br>• Build domestic industries in clean sectors<br>*Transport*<br>• Targets to reduce transport emissions<br>• Promote public transport, hybrids and electric vehicles |
| **Observations on mitigation interventions** | Many programs in the NAPCC underway for some time. It is not always clear how the plan will build or expand on these existing programs. Proposes to revisit many difficult / stalled policy and regulatory reform processes. Proposed programs to significantly expand solar power are new; energy efficiency mission implementation involves significant new programs. | Activities are categorized as "in implementation phase" or "in conception phase." Some activities in implementation date from the 1990s or earlier; others are newer. Activities "in conception" include both relatively untested ideas as well as others that are being actively explored. New deforestation goals are set, noting that international support is helping realize these efforts. | Much of the plan builds on ongoing programs. Emphasis on building R&D and technical capacity within the country. Identifies potential emission reductions of some interventions. Strong new emphasis on institutional reform, and coordination across agencies in implementing the plan. | Proposes new programs, including a cap-and-trade scheme for the energy sector. Strengthens some existing programs; states that others (e.g. several related to energy efficiency) are ongoing and are reflected in the baseline emissions scenario. Notes that not all proposed goals are funded; $7B have been assigned to goals targeting reductions of 93.5 $MtCO_2e$, leaving a $6.6B gap. | Plan explicitly identifies actions that would be new or scaled up as part of a response to climate change. Actions identified in the "start now" scenarios reflect ongoing priorities and programs; next the plan identifies measures to scale up these initiatives, and explores how market and other instruments might allow South Africa to take higher-cost steps. |

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| **Examples of proposed adaptation interventions** | *Agriculture*<br>• Drought /thermal/pest-resistant crop development<br>• Improve communication and capacity of extension workers to support vulnerability-reducing activities<br>• Weather modeling, risk insurance, credit; improve access to weather and agricultural information<br>*Ecosystems / Biodiversity*<br>• Monitor Himalayan glaciers and ecosystems<br>• Improve land use and development planning<br>• Improve coastal protection through infrastructure and forest/ mangrove restoration<br>*Water*<br>• Increase water use efficiency and equity<br>• Mandate water harvesting and recycling<br>• Wetlands conservation<br>• Desalination technology development<br>*General*<br>• Support climate change research and modeling | *General*<br>• Improve regional modeling of climate change impacts<br>• Vulnerability mapping for coastal zones, biodiversity, water resources, electricity generation, oil and gas, desertification, urban areas<br>• Reduce poverty and inequality<br>• Prepare for health implications: improve knowledge base, increase technological capacity of health professionals, establish early warning systems<br>• Identify most vulnerable groups and address socio-economic factors | *Agriculture*<br>• Improve agricultural infrastructure<br>• Promote use of high-yield, stress-resilient crops<br>• Promote large-scale, water-saving irrigation<br>*Ecosystems / Biodiversity*<br>• Incorporate climate change into laws and regulations on forests and wetlands<br>• Expand ecosystem monitoring systems<br>• Expand forest area and develop bio-corridors<br>• Refine fire forecasting, monitoring, and suppression techniques<br>• Prevent grassland desertification (increase by 24M hectares, restore 52M hectares)<br>*Water*<br>• Unify water management, planning, and allocation<br>• Speed up water infrastructure development including North to South Water Diversion project<br>• Slope and shore protection through engineering and biological measures | *Agriculture*<br>• Reduce soil degradation<br>• Modernize hydro-agricultural infrastructure<br>• Databases on resilience of key crops<br>*Ecosystems / Biodiversity*<br>• Preserve, widen, and connect protected areas<br>• Build ecosystem resilience<br>• Avoid and control spread of invasive species, diseases, parasites<br>*General*<br>• Evaluate current national capacities and seek sectoral integration<br>• Deepen understanding of impacts of climate change on agriculture, forestry, water, ecosystems, infrastructure, cities<br>• Payments for environmental services<br>• Implement early warning systems<br>• Promote climate-resilient building standards<br>• Promote decentralized, small-scale, local energy supply systems | The LTMS do not address adaptation. South Africa is developing a National Climate Change Response Policy that touches on vulnerability and adaptation; the document was under discussion at press time. |
| **Observations on adaptation interventions** | The plans for India, Brazil, China, and Mexico successfully provide an indication of national adaptation needs and priorities. They articulate the potential effects of climate impacts on livelihoods, economies, and natural systems, but stop short of providing concrete procedures and strategies for meeting adaptation needs. All four documents reflect preliminary adaptation planning efforts and require elaboration or supplementation (likely elsewhere, in sectoral or regional planning documents) to achieve greater specificity. | | | | |
| | The NAPCC proposes adaptation strategies directed at sectors, with a particular focus on increasing the resilience of agriculture, urban water infrastructure, and the Himalayan socio-ecological system. It emphasizes the need to avoid compromising national economic growth. The NAPCC also proposes strategies to address funding needs for adaptation. It fails to include specific adaptation practices and implementation tools for all sectors. | The PNMC establishes goals along two general themes - increasing institutional, managerial, and legislative capacity for adaptation and promoting direct action-steps for addressing impacts, risks, and particular vulnerabilities. The PNMC identifies specific sectors and locations in need of adaptation and proposes both short- and long-term strategies. It is fairly comprehensive but still falls short of identifying specific action-steps and implementation strategies. | The plan stresses the need for adaptation of human and natural systems without hindering economic development. There is also a great focus on national level policy/ legislative approaches to enhance China's overall adaptive capacity. The adaptation strategies proposed tend to be large in scope and scale - the vision of the plan is impressive, but the document lacks specific targets and action-steps for realizing these goals. | The PECC serves as a national guideline for promoting adaptation strategies; therefore it provides visions and goals for particular sectors but does not provide specific procedures for achieving these goals. The PECC addresses the importance of collaborating and harnessing existing institutional capacity through streamlining and integration. | |