Perspective

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Climate Change after the Kyoto Protocol *Implications for the MENA Region*

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EXECUTIVE SUMMARY

The global response to greenhouse gas emissions will capture the world's attention in Copenhagen in December 2009, when the United Nations convenes its annual meeting on climate change. Although Copenhagen will not provide a successor agreement to the aging Kyoto Protocol, negotiators are expected to come to some broad agreements about the substance of the next climate treaty and the process for getting to it. For countries in the Middle East and North Africa (MENA) region, this is a critical opportunity to start preparing national strategies for the low-carbon future and to formulate their approach to providing input on the shape of these global agreements.

Among the matters to be discussed are stringent new emissions targets for the 37 most-advanced economies; mechanisms to increase contribution levels from developing or emerging economies; and international sources of funding for emissions reductions in less-advanced countries. Officials will also be discussing ways to improve the functioning of carbon markets, which are increasingly becoming a critical element of the world's efforts to reduce emissions.

Changes in the global framework on climate change policy present both risks and opportunities for the MENA region. To mitigate the former and capitalize on the latter, key stakeholders in the region will need to ensure that they are part of the process now and in the future.

KEY HIGHLIGHTS

- The new global framework on climate change policy will build on the Kyoto Protocol but will need to address critical gaps in flexibility, compliance, land management, clean technology, and carbon markets and finance.
- The use of nationally appropriate mitigation actions (NAMAs)—self-funded, co-funded, or funded by carbon markets—provides a consistent global platform for commitments while allowing flexibility for individual countries.
- Greater use of carbon markets and carbon finance will be critical to achieving the required emissions reductions.
- The MENA region will need to formulate its own low-carbon development strategies and ensure that it capitalizes on the opportunities provided by a new architecture

CLIMATE CHANGE POLICY: FROM KYOTO TO COPENHAGEN

The thousands of political, business, and environmental leaders who will descend on Copenhagen in December 2009 for the United Nations' annual conference on climate change have a huge task ahead of them. They will be trying to create the momentum needed to forge a comprehensive and enduring global agreement to control the level of greenhouse gases in the atmosphere. This effort has been unfolding over the last 17 years, and Copenhagen is unlikely to provide any breakthrough answers. But coming at a time when the limitations of previous climate change initiatives have become clear, Copenhagen will set the stage for a more comprehensive and enduring treaty. Governments and businesses all over the world need to pay attention.

Participants in Copenhagen will discuss a new architecture for a climate change agreement—one that builds on the 12-year-old Kyoto Protocol but that also diverges from it in significant ways that have important implications for the roles of individual nations.

The creators of the Kyoto Protocol, in 1997, never envisioned it as a comprehensive, long-term answer to the dangers of climate change. Rather, they saw it as a starting point. The commitment period—when 37 advanced-economy nations needed to begin reducing their greenhouse gas emissions, relative to their 1990 baseline levels—didn't even start until 2008, a decade after the treaty was created. The reductions cover just five years (through 2012), and the Protocol itself didn't tackle some issues deemed to be too difficult, such as forests and agriculture.

Still, a lot of ideas with enduring value were born of the Kyoto Protocol, chief among them the clean development mechanism (CDM). The CDM allows for nations that do not qualify as economically advanced to get credits in the form of certified emission reductions (CERs) for any projects that lower the level of greenhouse gas emissions. These credits have economic value and can be sold to companies in advanced nations, which can use them to satisfy their own emissions obligations. The creation and trading of these certificates has spurred the development of a global carbon market, which is drawing financial institutions into the area, creating backing for low-carbon technologies, such as solar, wind power, and energy efficiency.

Kyoto provides the foundation that global climate change officials will be building on. Copenhagen is the 15th session of the Conference of the Parties (COP) that the 192 member states of the United Nations have held since forming the UN Framework Convention on Climate Change (UNFCCC) in 1992. To be sure, some COPs have been more momentous than others. Kyoto was the site of COP3—obviously a pivotal meeting. COP13 in Bali, on the eve of the Kyoto Protocol's first effective year, produced an action plan that called for two years of negotiations toward a new framework for global climate policy.

Participants in Copenhagen will discuss a new architecture for a climate change agreement—one that builds on the Kyoto Protocol but that also diverges from it in significant ways.

SETTING THE AGENDA FOR COPENHAGEN

COP15 in Copenhagen comes at a time of heightened concern about what runaway climate change might mean for the world's economies and people. Scientists who once doubted that they would see the effects of climate change before 2020 now say those effects are already becoming visible. Although the doomsday scenarios have rightly been discounted, climate change poses very real risks to the world's drinking water, food supply, and to the habitability of coastal areas. Indirectly—because of the desperation people feel when they don't have food and water—climate change also creates some long-term security risks.

As these are global threats, the answers likewise must be coordinated globally. No single country can solve the problem of greenhouse gas emissions by itself. Against this backdrop of growing awareness, there are some key problems and opportunities that will drive the discussion in Copenhagen:

Need for a more flexible treaty. As good a start as the Kyoto Protocol was, it is now clear that some aspects of it were too inflexible. For instance, the Protocol separated national governments into just two categories. The first consisted of 37 advanced-economy nations, which were listed in a section of the Protocol called Annex 1 and were asked to commit to binding limits on their net emissions. The second category covered every other nation; these nations weren't listed in Annex 1 and were encouraged to voluntarily implement policies and measures to reduce their emissions growth. A successor agreement needs to identify more points along the commitment continuum, and to facilitate this there must be more clarity on the criteria associated with different points on the economic spectrum—whether a nation's status is "Advanced," "Emerging," "Developing," or "Least Developed." It needs to lay out the path by which countries attain each successive economic category, and establish realistic expectations for each category. Different nations are at very different points in terms of their economic, political, and social maturity. A developing country, for instance, likely cannot shoulder the same commitments as an emerging one.

Compliance challenges. Although the Kyoto Protocol included a compliance framework, it hasn't been effective. That became obvious after Canadian delegates said their country would face "economic disaster" if it honored its commitments under the Kyoto Protocol, and announced it would not do so. If commitments under the new architecture are more closely aligned with nations' ability to reduce their emissions, compliance will become less of an issue. Certainly, some enforcement mechanism will still be necessary, but it is extremely unclear at this point what that will be.

Failure to address land management. Forests and other land-management activities were not fully addressed in the Kyoto Protocol. They must play a more central role in the next treaty. These sectors simply have too much to contribute to mitigation and adaptation to be left out again. It's imperative that land managers and decision makers be given incentives to adopt new behaviors that realize the land's potential for removing greenhouse gases from the atmosphere.

Accelerated adoption of low-carbon technologies. Alternative energy sources, such as wind turbines, and energy efficient equipment need to be encouraged. The CDM or other market tools can provide valuable assistance in this regard. Carbon markets and carbon finance are the primary means of mobilizing the vast amounts of private-sector capital that will be needed over the coming decades.

Broader scope for carbon markets and carbon finance. There needs to be a viable transition from purely project-based positive incentives (such as the CDM) through to multisector trading mechanisms (such as the European Union Emission Trading System, or EU ETS) so that nations can map out how they will use carbon markets and carbon finance to effect change within their borders and across the globe.

COPENHAGEN AND BEYOND: TOWARD A NEW GLOBAL ARCHITECTURE

What is the likely architecture of a comprehensive and enduring global agreement?

What sort of commitments can national governments make so that the whole agreement doesn't dissolve in the ebb and flow of inevitable political priorities?

How can the global community create an architecture that is sufficiently robust to drive real change, while also being flexible enough to accommodate the vast array of nations and their abilities to contribute?

What do these developments mean for the MENA region?

It will take months, even years, for all the changes that are discussed in Copenhagen to take final shape and become part of the world's battle plan for reducing the effects of climate change. Nevertheless, the negotiations that have taken place over the last two years make certain elements of the Copenhagen discussion clear—and pave the way for a full-blown treaty to be inked, possibly as soon as COP16 in Mexico.

A post-Kyoto Protocol architecture will contain four key pillars.

First, there will be ambitious national-level emissions targets for advanced-economy nations. These are likely to take the form

The negotiations that have taken place over the last two years make certain elements of the Copenhagen discussion clear.

of commitments to limit national emissions (on a net basis) by defining annual quantified emissions limits, probably expressed as a percentage reduction from a historical reference point (e.g., an 80 percent reduction from 2000 levels).

Second, there will be a wide variety of nationally appropriate mitigation actions (NAMAs) for all other nations. These will form the basis of national commitments made by least-developed, developing, and emerging nations.

Third, substantial amounts of financial and technological support for both mitigation and adaptation will be an integral part of any agreement. The details of these support mechanisms remain to be determined, but negotiators are looking to establish a global climate fund with a number of funding "windows." These windows will likely be for capacity building, planning, research, technology transfer, sharing of best practices, direct funding of adaptation activities, and direct funding of mitigation actions. The money for the global fund will come from advanced nations, through levies, and possibly through contributions from emerging nations. Fourth, there will need to be an institutional framework to support the next global agreement. The shape that this framework will take is currently unclear, though it is expected to be much less centralized than the current framework, under which the UNFCCC coordinates activities, the Global Environment Facility provides some funding, and the CDM Executive Board regulates the credits that form the basis of global carbon trading markets. Although these organizations will remain in place and continue to play a role, a lot of what will happen institutionally in terms of countries' activities and commitments will occur at the national level, based on countries' individual circumstances.

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COMMITMENTS FOR ECONOMIES AT ALL LEVELS OF DEVELOPMENT

In the next agreement, countries will likely have much more flexibility in terms of their commitment options. Advanced-economy nations will continue to face a quantifiable limit on their national emissions—with the main question at COP15 being what those limits are and how they relate to historical emissions levels. National governments will find different ways to meet their emissions reductions obligations (e.g., via regulations, carbon taxes, emissions trading, or international emissions reductions) depending on what they think will work best in their countries. This will vary based on a wide range of considerations, including not only a country's dominant economic sectors and its domestic energy resources, but also its governance structure, political situation, culture, attitudes toward taxation, and usual pace of change.

For all other nations—least developed, developing, and emerging—there will likely be a qualitative commitment that aims to produce a quantitative outcome. In practice, this means these nations will commit to investigate, design, and implement a range of policies and initiatives that will contribute to mitigation of emissions. These policies and initiatives will likely result in a reduction in national emissions compared to a forecasted trend, or business-as-usual (BAU) baseline, but there will not be an explicit commitment to reduce emissions by that amount.

As an example, Brazil recently announced a commitment to implement a package of initiatives including reducing deforestation in the Amazon, improving the use of integrated land management systems in its agriculture sector, and promoting the use of "green steel." This package is expected to result in national emissions that range from 38 percent to 42 percent lower when compared to BAU projections by 2020. However, this is not a binding commitment to reduce national emissions by that amount.

The basis for this form of commitment is a national low-carbon development strategy. This is essentially an integrated plan that will allow a country to continue with its economic development while reducing the carbon intensity of that development. Each national strategy includes an assessment of the nation's current situation in terms of energy resources, industrial activities, transport systems, and agricultural practices as well as an analysis of how emissions from each of those sectors can be reduced. These low-carbon development strategies will identify and spell out a series of nationally appropriate mitigation actions, which the government will pursue and for which it will receive some outside financial support.

NAMAs: A WAY FOR COUNTRIES TO FORMULATE THEIR COMMITMENTS

The use of nationally appropriate mitigation actions as a basis for countries' commitments provides a consistent global platform while allowing flexibility for individual countries. Some examples of NAMAs include:

- *Specific activities* such as the introduction of feed-in tariffs, the liberalization of energy markets, R&D related to carbon capture and storage, waste and recycling regulations, and minimum efficiency performance standards for appliances

- *Projects and programs* that have a direct bearing on emissions reductions and could perhaps be registered under the CDM, including the upgrade of industrial facilities or the distribution of energy-efficient lightbulbs

- *Broad-scale initiatives* such as the implementation of an energy-efficiency crediting program or the introduction of a sector-specific emissions trading system—for instance, for cement or steel production.

An important aspect of NAMAs is their funding sources. Each country, as it develops its low-carbon development strategy, will identify the incremental costs associated with implementing each NAMA and divide its NAMAs into three groups:

- *Self-funded NAMAs,* which a country will implement with only minor assistance from international sources, primarily

in the form of enabling activities such as capacity-building or sharing of best practices

- *Co-funded NAMAs*, which will be implemented with international assistance, in the form of financing, technology transfer, or capacity building

- *Carbon market NAMAs*, which are eligible for support in the form of credits for emission reductions achieved and are likely to be funded by the private sector. These credits are used by companies and advanced economies to meet their emissions compliance obligations. The credits have a financial value that will be determined by trading in international carbon markets.

Taking the Waste Out of Waste Management

To understand how NAMAs can work in practice, take the hypothetical example of a least-developed economy that wants to improve the sustainability of its waste sector, including the reduction of emissions from waste-related activity. The waste sector in these economies is generally economically inefficient and environmentally unsound, offering ample opportunity for improvement. Unsorted trash is collected by diesel trucks that move around the city, releasing carbon dioxide into the air on their way to dumps that are scavenged by the poorest of the poor. NAMAs can help such economies reach their ideals: programs to have citizens and businesses sort their recyclables from their organic garbage, a modern truck fleet to collect trash, and workers and facilities to do additional sorting. The sorted waste can then be moved to landfills, turned into compost, or returned to the industrial cycle.

The three types of NAMAs should work in an integrated fashion to build a sustainable waste sector. In this particular example, the country has a strong regulatory system in place but limited financial resources—circumstances that will affect how it develops its NAMAs.

For instance, one NAMA could be the establishment of regulations that mandate appropriate waste management at landfill sites, as well as other environmental controls such as emissions standards for truck fleets. Because regulatory measures do not cost much to put in place in a country that already has a strong regulatory framework, this would be a self-funded NAMA: The country would internally finance the implementation and enforcement of those new regulations, though it may seek assistance in terms of international best practices in monitoring and compliance systems.

Such regulations would necessitate upgrades to the country's infrastructure for waste collection and sorting—such as new facilities and trucks. Given the country's limited financial resources, the development of new infrastructure would likely be a co-funded NAMA: The country would request international assistance in the form of direct funding, technology transfer, and training on new technology.

Finally, if the country encourages and facilitates the development of CDM projects in the waste sector that go beyond the new regulations—recovering methane from landfills, for instance, or producing organic fertilizer—participating companies may be eligible for credits that can be sold into the carbon markets.

THE ROLE OF CARBON MARKETS AND CARBON FINANCE

There are two types of carbon markets, which interact with each other. In the first, known as carbon compliance markets, companies buy and sell units associated with their compliance obligations at the country level and occasionally the regional level. The second type, known as carbon credit markets, are international and involve the buying and selling of carbon credits that companies in less-advanced nations earn by undertaking projects that reduce their greenhouse gas emissions.

For instance, a company in Thailand may earn credits by using crop waste instead of fossil fuels to generate heat and power for a manufacturing plant. The Thai company can then sell those credits to a Spanish company (Spain being part of Europe's carbon compliance market, the EU ETS), and the Spanish company can use the credits to meet its own emissions obligation under Spanish law.

Pure economic theory suggests it would be most efficient if there were a single global carbon market. However, such a market is unlikely to develop. The problem is that companies face enforcement with respect to compliance obligations

only on a national basis. There is no existing international framework that provides adequate enforcement of compliance obligations on either companies or government agencies, and no practical chance in the near term of setting one up.

Thus, carbon compliance markets will continue to operate only on a national or regional basis. The EU ETS (the biggest carbon compliance market in operation) will be followed by a Japanese system, the New Zealand Emissions Trading Scheme, the Australian Carbon Pollution Reduction Scheme, and some form of cap and trade in the U.S. Each of these markets will define how its participants can use international credits (such as CERs from the CDM) and will specify other units that may be eligible for compliance purposes.

Unquestionably, cross-recognition of compliance units between domestic and regional systems will help the development of carbon markets and carbon finance. And there may be deeper integration between specific markets (such as between Australia and New Zealand), though the level of integration will be limited by the political realities of national government autonomy. The emergence of sector-specific carbon markets, either within nations or across inherently multinational activities such as aviation, could also provide a boost to carbon finance.

The role of carbon markets and carbon finance cannot be understated. A major portion of the financial backing necessary to tackle climate change will need to come from the private sector: There is not enough public funding available for governments to pay for the required volume of emissions reductions.

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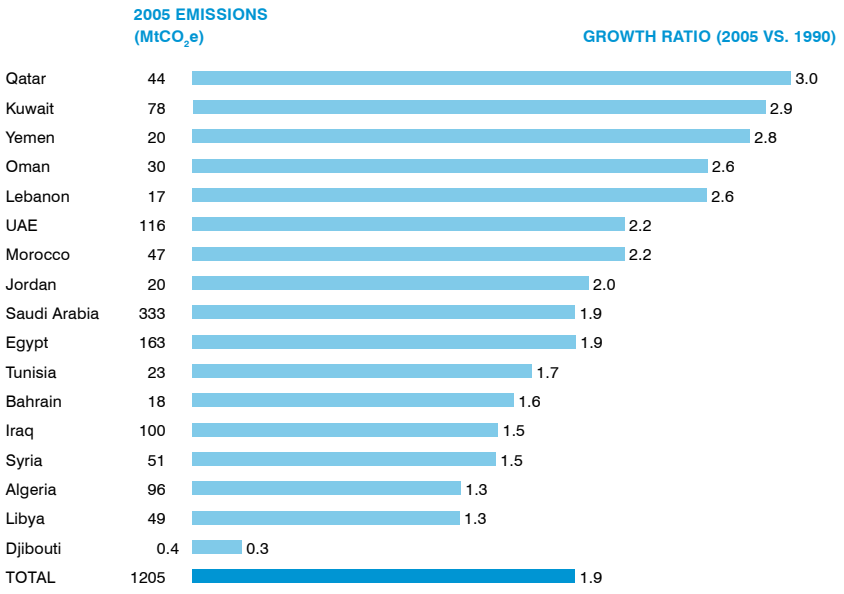
CLIMATE CHANGE AND THE MENA REGION

Runaway climate change poses challenges for just about every nation. In the MENA region, there are substantial primary risks including diminished supplies of potable water, extreme weather events, and rising sea levels. There are also significant secondary risks, namely reduced agricultural productivity and security threats from displaced persons.

To date, almost all of the nations in the MENA region have ratified the Kyoto Protocol. As "developing" or "non-Annex 1" nations, they are not committed to quantified limits on their national emissions between 2008 and 2012. In fact, between 1990 and 2005, annual emissions in the MENA region are estimated to have grown by approximately 90 percent (*see Exhibit 1*). The bulk of these emissions derive from fuel combustion, which is the product of demand for electricity and heat, transportation, and manufacturing.

The Kyoto Protocol provides MENA nations with the opportunity to benefit from emission-reduction projects financed via the clean development mechanism. However, only a handful of countries in the region have begun to develop CDM projects and, individually and in aggregate, MENA countries have done much less than other regions to take advantage of CDM opportunities (*see Exhibit 2*).

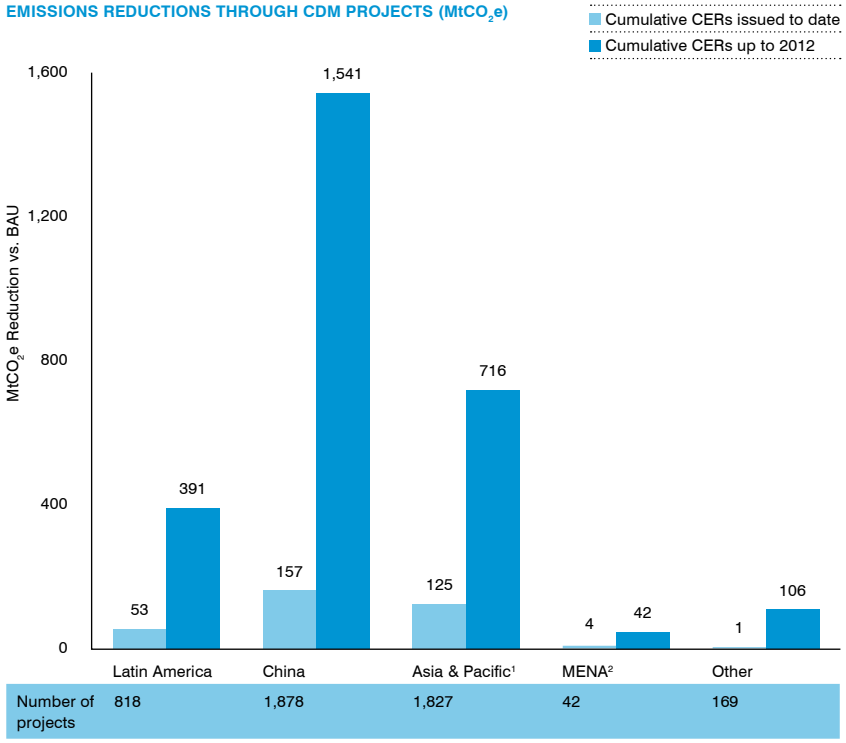
Exhibit 1
Emissions in the MENA Region Have Grown Significantly Since 1990



Note: $MtCO_2e$ = metric ton carbon dioxide equivalent
Source: World Resources Institute

Exhibit 2
The MENA Region's Total Emissions Reductions from CDM Projects Are Low Relative to Other Regions

EMISSIONS REDUCTIONS THROUGH CDM PROJECTS ($MtCO_2e$)



	Latin America	China	Asia & Pacific[1]	MENA[2]	Other
Number of projects	818	1,878	1,827	42	169

EMISSIONS REDUCTIONS THROUGH MENA CDM PROJECTS

COUNTRY	TOTAL EMISSIONS 2005 ($MtCO_2e$)	REDUCTIONS THROUGH CDM ($MtCO_2e/y$)	NUMBER OF CDM PROJECTS[3]
Saudi Arabia	333	-	-
Egypt	163	3.4	13
UAE	116	0.6	9
Iraq	100	-	-
Algeria	96	-	-
Kuwait	78	-	-
Syria	51	0.1	2
Libya	49	-	-
Morocco	47	0.5	10
Qatar	44	2.5	1
Oman	30	-	-
Tunisia	23	0.7	3
Jordan	20	0.7	4
Yemen	20	-	-
Bahrain	18	-	-
Lebanon	17	-	-
Djibouti	0.4	-	-
Total average yearly expected emissions reductions in MENA: 9.2 $MtCO_2e$			

Notes: 1) Data excludes China; 2) Data excludes Iran and Israel; 3) Includes all CDM projects that have entered the validation process
Source: UNEP Risoe Centre; UNFCCC CDM statistics

RISKS FOR THE MENA REGION

Any new architecture will likely mean changes in the MENA region, and could present challenges to address. It is true that MENA nations' status as developing countries may exempt their governments from hard-and-fast emissions commitments in this round of negotiations. However, COP15 may create a pathway toward deeper commitments that MENA countries will have to make in the future.

Efforts to minimize climate change are partly aimed at reducing the world's reliance on fossil fuels. If the MENA region—one of the world's leading producers of fossil fuels—wants to maintain its position as a global leader in energy, it will need to adapt to global changes in demand that could result from new policies.

Finally, there is a risk that protectionist approaches to international trade will emerge as a way to force nations to adopt low-carbon practices. Some advanced-economy nations (especially in the E.U.) subject to stringent emissions rules have suggested that they may impose carbon tariffs to protect sectors and companies facing competition from nations or regions without restrictions on emissions. In particular, this may affect so called emissions-intensive, trade-exposed industries—such as cement, steel, and paper and pulp. The implementation of such tariffs could significantly limit or devalue exports from carbon-intensive economies, damaging economic development in these nations.

OPPORTUNITIES FOR THE MENA REGION

There are a variety of ways in which the MENA region could either benefit from, or limit negative impacts from, a new agreement to reduce global emissions:

- **Carbon Markets:** The Kyoto Protocol provides MENA nations with the opportunity to benefit from emission reduction credits through the clean development mechanism. MENA companies that earn these credits can sell them to their counterparts in advanced nations, such as the U.S. or Japan, generating substantial funds.

- **Carbon Finance:** The volume of projects and traded credits in existing carbon markets (such as the EU ETS) has grown rapidly in recent years. With the implementation of carbon markets on a broader scale (e.g., in Australia, Japan, and the U.S.), these volumes of trade will rise even faster. This will create additional opportunities for the MENA region to benefit from the financial flows associated with emissions reductions and the carbon markets.

- **Funding Mechanisms for Mitigation:** A centralized funding mechanism is likely to be a core component of the new architecture. This will provide nations with direct funding for nationally appropriate mitigation actions that are categorized as co-funded NAMAs; this could be a substantial source of international funding for policies, programs, and initiatives that contribute to the sustainable development of the region.

.• **Funding Mechanisms for Adaptation:** A centralized funding mechanism will also assist with adapting to the climate change that is already under way. Funding will likely be available for vulnerability assessments, financial needs assessments, capacity-building and response strategies, integration of adaptation actions into sectoral and national planning, specific projects and programs, and means to incentivize the implementation of adaptation actions. Any financing provided through this fund or mechanism could present a welcome addition to national efforts to cope with the impacts of climate change.

- **Technical Assistance and Technology Transfer:** Apart from the financial aspects of any emissions reductions, the rapid rollout of low-carbon technologies and best practices, mostly from advanced economies, will also play a major role in reducing emissions. The MENA region can capitalize on this influx of new technologies to develop its own capabilities and meet its goal of becoming a technology exporter in some areas.

- **International Recognition and Political Goodwill:** Climate change is a topic high up on the agenda of many nations. Consequently, advances in this area can be used to generate goodwill and political capital and help other initiatives of national importance. Such advances will also support future efforts by MENA to position itself as a region of "green" suppliers.

PREPARING TO TACKLE CLIMATE CHANGE

Despite the urgency surrounding climate change as this decade comes to a close, COP15 will not produce a new treaty. In some of the most influential nations (which are also some of the biggest emitters), the politics still lag behind the science. However, what happens at COP15 and after is likely to have a big impact on the MENA region. Climate change and the world's efforts to combat it present risks for many MENA countries whose economies rely on traditional fossil fuels, but there are also opportunities for MENA countries that anticipate what is coming and can devise a plan for capitalizing on what the future brings.

This means MENA countries, to the greatest extent possible, should participate in the discussions taking place in Copenhagen and those that follow. Their governments should understand what the coming changes mean for them and devise appropriate strategies and initiatives accordingly. In order for the MENA region to benefit from the development of a new framework for global climate policy, its governments need to be certain that they have a seat at the table—and that they are making efforts in good faith in their own countries.

As part of the new architecture, each MENA country will need to prepare a national low-carbon development strategy. This will be an important statement on how the government intends to reduce the country's emissions intensity as it continues with its economic development.

Although the strategy should take into account international best practices, it also needs to consider the specific challenges of every country. For example, a low-carbon strategy for a Gulf Cooperation Council country needs to take into account, among other factors, its unique weather conditions and the associated importance of cooling technologies, the need to leverage existing fossil fuel resources in the most sustainable way, and the current and forecasted demand for energy, as well as the issue of water scarcity and the increasing importance of desalination technologies.

Most important, MENA countries will have to balance plans to reduce emissions with their need to continue on a trajectory of growth.

Some MENA countries are already starting to prepare their national low-carbon development strategies, and are working through the necessary steps:

- Develop a national emissions inventory and UNFCCC reporting processes
- Create projections of BAU growth in emissions
- Identify abatement opportunities in each sector
- Assess the feasibility and practicality of the abatement opportunities and prioritize them
- Formulate a series of specific policies and initiatives that can be grouped into identifiable NAMAs
- Develop appropriate metrics for each NAMA so that the progress of its implementation can be assessed and reported
- Estimate the costs associated with undertaking each NAMA
- Categorize the NAMAs into self-funded, co-funded, and carbon market NAMAs
- Identify the appropriate institutional settings for implementing the nation's low-carbon development strategy, including the use of international funding

In the years since the Kyoto Protocol was developed, the MENA region has made significant economic advances. In the coming years, MENA countries will face the challenge of ensuring the sustainability of this growth for future generations. In this context, they have a unique opportunity between COP15 in 2009 and COP16 in 2010 to make their voices heard and start to prepare for their low-carbon future. They should not let this opportunity pass them by.

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