

Discussion Paper

Human Development in a Changing Climate: A Framework for Climate Finance

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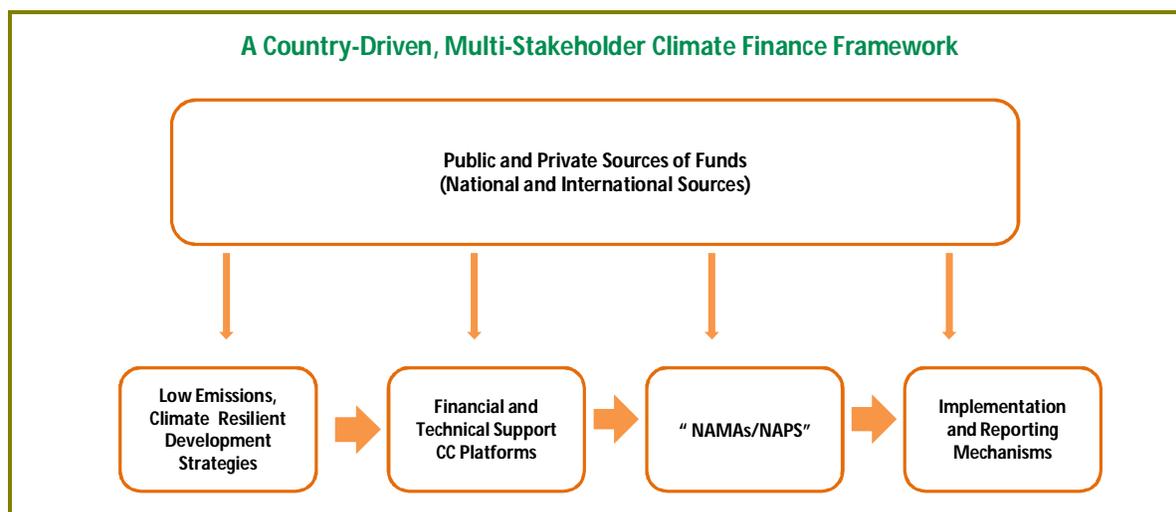
EXECUTIVE SUMMARY

This paper outlines a climate finance framework to assist developing countries to move to low-emissions, climate-resilient growth paths. The challenge in climate finance is to find ways to mobilize a variety of resources at scale, while at the same time ensuring that it can be delivered with sufficient speed to where it is most needed.

A number of proposals have recently been put forward on the mobilization of resources for climate finance, as well as on possible governance structures for delivering these resources. The majority of these proposals address the issues of raising and delivering climate change finance separately. This paper takes an integrated approach to the issue, as mechanisms chosen to raise finance will affect the access to, and efficient use of, these resources.

UNDP is proposing a country-driven, multi-stakeholder climate finance framework to assist developing countries to scale up efforts to address climate change in a way that strengthens and advances national development priorities. The framework is built on four mechanisms at the country level:

- **Formulation of low-emissions, climate-resilient development strategies.** To bring about bottom-up national ownership, incorporate human development goals, and take a long-term outlook.
- **Financial and technical support platforms.** To catalyse the requisite scale of climate finance and associated capacity.
- **NAMA/NAP¹-type instruments.** To bring about balanced and fair access to international public finance.
- **Coordinated implementation and MRV² systems.** To bring about long-term, efficient results.



The proposed framework, through coordination between each of the four mechanisms and through the promotion of climate change financing as an iterative, evolving process, is designed to address four basic sets of concerns typically associated with bottom-up approaches: ensuring GHG emission reductions achieved are sufficient to prevent dangerous climate change; enhancing ecosystem resilience to climate change so that ecosystem services underpinning development are sustained; ensuring the effective use of funds; and guaranteeing that activities are undertaken as efficiently as possible.

A key UNDP objective is to assist developing countries in catalyzing low carbon, climate resilient investment. While households and businesses are largely responsible for making these investments, UNDP can play an important role in advising governments on the mix of regulatory and financial incentives to promote investment. UNDP has been one of the largest sources of technical assistance to achieve this objective over the past two decades. Building on past efforts, UNDP is in a position to provide effective support to developing countries at each mechanism of this framework going forward.

¹ Nationally Appropriate Mitigation Action / National Adaptation Plan

² Monitoring, Reporting & Verification

Introduction

A number of proposals have recently been put forward on mobilizing climate finance, as well as on possible governance structures for delivering these resources. The Copenhagen Accord suggests mobilizing US \$100 billion per year by 2020 to support climate-change mitigation and adaptation activities in developing countries, with the funds coming from “public and private, bilateral and multilateral, including alternative, sources of finance”.

The process of identifying potential sources of climate change finance has already started. Developed countries, as part of the Copenhagen Accord, have made a commitment of \$30 billion “fast-start” funding for the period 2010-2012. The UN Secretary-General has established a High Level Advisory Group on Climate Change Financing (UN AGF) to make proposals on where the financing could come from. Box 1 highlights some recent proposals submitted to the attention of the international community.

Box 1: Potential Sources of Climate Change Financing

- 1. Public finance from climate sources**
 - Phase-out of regressive fossil fuels subsidies
 - AAU auction proceeds
 - Emission Trading Schemes (ETS) auction proceeds
 - Carbon taxes
 - Marine and aviation/bunker fuel levies
 - Offset levies
- 2. Public finance from non-climate sources**
 - “Tobin” tax, taxing revenues from financial transactions
 - Leveraging of IMF Special Drawing Rights
- 3. Carbon markets including the emerging REDD related markets**
- 4. Other international financing proposals**
 - Debt for clean energy swap
 - International

For example, in March 2010 the IMF issued a staff paper that details how Special Drawing Rights (SDRs) might be leveraged to issue low-cost “green bonds” in global capital markets.¹ The paper predicts that a contribution of \$120 billion in SDRs into the fund proposed by IMF could be leveraged for the issuance of \$40 billion in green bonds each year for a period of 30 years – over \$1 trillion in total financing.

There have also been parallel discussions on possible delivery mechanisms for international public finance. Proposals—including those in the formal UNFCCC negotiations—touch on different aspects including governance, direct access and the use of existing versus new institutions.

While the issues of raising and delivering climate change finance are often treated in isolation, they are in fact very much inter-related. Climate change finance is unlikely to come from a single source, with more than 50 international public funds, 60 carbon

markets and 6,000 private equity funds already providing green finance.ⁱⁱ Each of these channels has different requirements, and the means in which they are combined will affect the capacity of countries to deliver money where it is most needed in an effective, efficient and accountable manner.

The remainder of this paper assumes that international public finance commensurate with the Copenhagen Accord will be mobilized, but seeks to address how it can be blended with, and catalyse, larger sources of public and private finance as well as be delivered in a nationally defined and directed way where it is most needed.

This paper therefore first highlights the key challenges of catalyzing and delivering climate change finance before proposing a country-driven, multi-stakeholder climate finance framework to address these challenges. It also outlines current UNDP activities and illustrates how these can be built upon to foster such a framework.

Key Challenges in Climate Finance

This section identifies four key challenges to raise and deliver climate finance where it is the most needed. These challenges form the tenets on which UNDP's proposed climate finance framework is based.

1. National Ownership and Synergies between Development and Climate Finance

National ownership is the key prerequisite for effective action to combat climate change.

Most multilateral environment agreements provide for the transfer of financial and technical resources from high-income to low-income countries. A number of global funds have been established to facilitate these transfers. Developing countries have repeatedly challenged the effectiveness of vertical funds that channel resources in a top-down manner in accordance with eligibility criteria that do not meet their unique national requirements and governance structures that do not provide for equal and equitable representation. Hence, it is critical that the climate finance framework encourage a new model in which donors and recipients agree on the conditions under which policy activities and investments are most likely to succeed and that these be built into existing national development processes.

UNDP's experience in supporting sustainable development over the past decades shows that the most important factor in determining policy and investment success is alignment of proposed activities with national and local priorities and needs. Such an alignment will promote climate change financing that should address climate and human development challenges, enabling developing countries to avoid large negative climate change impacts, which will particularly impact the poor, and maximise potential benefits from the continued provision of ecosystem goods and services, energy access and security, health, employment, mobility and competitiveness.

This alignment is critical to ensuring synergies between climate and development finance. Indeed, \$100 billion per year by 2020 represents almost a doubling of annual international public-finance flows to developing countries, and thus presents a major opportunity to scale up climate change efforts in a way that supports and augments poverty reduction efforts in developing countries.

Thus, an effective climate change finance framework should be able to support a country-driven, development-oriented transformation of the economy in the face of great climate uncertainty. The end objective is to create a double dividend of both climate and development impacts. In practice, this equates to the internalization of climate change response into national development processes.

2. Catalytic Use of International Public Finance

Whatever mechanisms might be put in place to raise the \$100 billion mentioned in the Copenhagen Accord, the actual scale of investment needed to address climate change is immense and is many multiples of this.

In the energy sector alone, additional investment of close to \$10.5 trillion is needed globally in the period 2010-2030 to have a 50-percent chance of maintaining GHG concentrations to less than 450 ppm.ⁱⁱⁱ Such climate change investments can often be commercially attractive. It is estimated, for example, that energy efficiency in transport, buildings and industry could reduce energy bills by over \$8.6 trillion globally over the period 2010-2030.

In ecosystem services, cost estimates to address the degradation of ecosystem services run as high as \$50 billion per year^{iv v}. Ecosystems such as forests and bogs provide ecosystem services that are essential to human well-being, that shape the development path of a country, region or local area and that provide protection from the negative effects of climate change.

The bulk of climate investment will ultimately be made by business, households and national governments. For example, the IEA (2009) estimates that approximately 40 percent of the global additional investment needed in 2020 will come from households, 40 percent from businesses and the remainder directly from governments. In this context, it is clear that limited international climate finance must

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be used in a highly catalytic manner to incentivize businesses, households and national governments to invest in low-carbon and climate-resilient technologies and ecosystem management to attract additional financial flows to support these investments.

Institutional funds might hold the greatest potential to provide financing to meet initial investment costs. With over \$60 trillion under institutional management, there are sufficient capital resources in the world to fund the transition to a low-emission and climate-resilient economy, provided that an appropriate risk-reward balance is offered. While climate change investments can be very profitable, they are also often perceived as risky, especially at the sub-national level and in developing countries.

A key objective of an international climate change finance framework should be to enable countries to establish the optimal mix of policy and financing tools to reduce regulatory uncertainty and investment risks, thereby making climate change investments more attractive to project developers and investors. In this way, international public finance can be used in the most catalytic manner.

3. *Balanced and Fair Access to Finance*

Another challenge in climate finance is ensuring balanced and fair access to the funds available. While there have been a number of recent innovative sources of financing for climate change, some of these have suffered from under-representation among certain developing countries and from market imperfections.

For instance, although an estimated 575 million people still rely on traditional biomass for cooking in Sub-Saharan Africa, the region accounts for less than one percent of total private investment in clean energy. A study from the World Bank^{vi} concluded that 170 GW of additional power-generation capacity could be created in Sub-Saharan Africa through low-carbon projects eligible for the CDM, equating to roughly four times the region's current modern-energy production. Despite this potential, to date just five countries – none of them in Africa – account for an 80-percent share of global CDM credits, and there is strong concern that this mechanism could entirely by-pass Africa.

A similar situation is found for most new market-based sources of climate change finance (export credits, green bonds, weather derivatives, etc.). Even more worrisome, this uneven access to financial resources could worsen in the coming years as climate change financing shifts from project-based to programmatic/sectoral approaches and as the innovative sources of funds multiply. As of 16 April 2010, only 33 of the 151 developing country Parties to the UNFCCC have made a NAMA submission. The content of the submissions varies greatly: from letters of intent to undertake NAMAs under the Copenhagen Accord to reports over 30 pages in length detailing climate change mitigation actions broken down by sector, scenario, estimated impact, time-frame, financial requirement and specific NAMA actions. In the absence of dedicated technical assistance, there is a major risk that only a few emerging economies will be able to develop NAMAs robust enough to lay the foundations for international financial transfers, resulting in a repeat of the CDM experience.

An additional human development consideration beyond top-level access to finance is the allocation of benefits from financing across socio-economic groups within regions and countries. Countries should seek to ensure an equitable distribution of the benefits of climate change investment so that the poor, those likely to be most affected by climate change and those least likely to benefit from such investment without appropriate distributional policies, can also benefit.

In parallel to questions of *market* access, there are also on-going and highly political discussions of balanced and fair access to *public* financing. Developing countries have been clear in their demands for a reformed governance system for allocating, approving and disbursing public climate financing under the UNFCCC. Ensuring that developing countries and the poorest socio-economic groups within regions and communities have equitable decision-making power in the management of public finance will be critical to ensuring that climate finance is most effectively linked to often varying development priorities.

As such, an effective climate change framework will need to be able to accommodate both equitable governance and specific market conditions and absorption capacities of developing countries in the design of market-based and innovative financing mechanisms.

4. Coordinated Implementation and Reporting Mechanisms

Climate finance on a scale commensurate with the Copenhagen Accord will entail an unprecedented level of implementation and reporting complexity – over a number of decades –, involving a variety of actors, a variety of actions, and a variety of sources of finance.

The understanding of climate change and the effectiveness of climate finance activities will be constantly evolving. National climate change activities will need to be updated on a regular basis. Hence, a monitoring framework will need to be put in place to assess progress and evaluate the need for remedial measures and new strategic approaches. National GHG-inventory systems might need to be enhanced to report both on a sectoral and territorial basis, and quality-assurance capacity might need to be upgraded. It will be vital to ensure that data from monitoring of climate activities will serve as feedback into the formulation of subsequent generations of climate change activities over a very long period of time, possibly up to the end of this century. In countries with high levels of emissions from deforestation, climate change strategies that seek ecosystem-based approaches will need tailored monitoring and reporting approaches.

Data from these monitoring activities will also be required to (i) ensure that the actual GHG emission reductions are enough to prevent dangerous climate change; (ii) provide to the international community sufficient assurances that the funds are used effectively; and (iii) guarantee that climate change activities are undertaken as efficiently as possible.

The proposed UNDP climate finance framework will need to encourage coordinated, effective implementation and reporting to (i) avoid duplication and fragmentation; (ii) inform the formulation of several generations of strategies, programmes and projects; and (iii) optimize the use of international finance.

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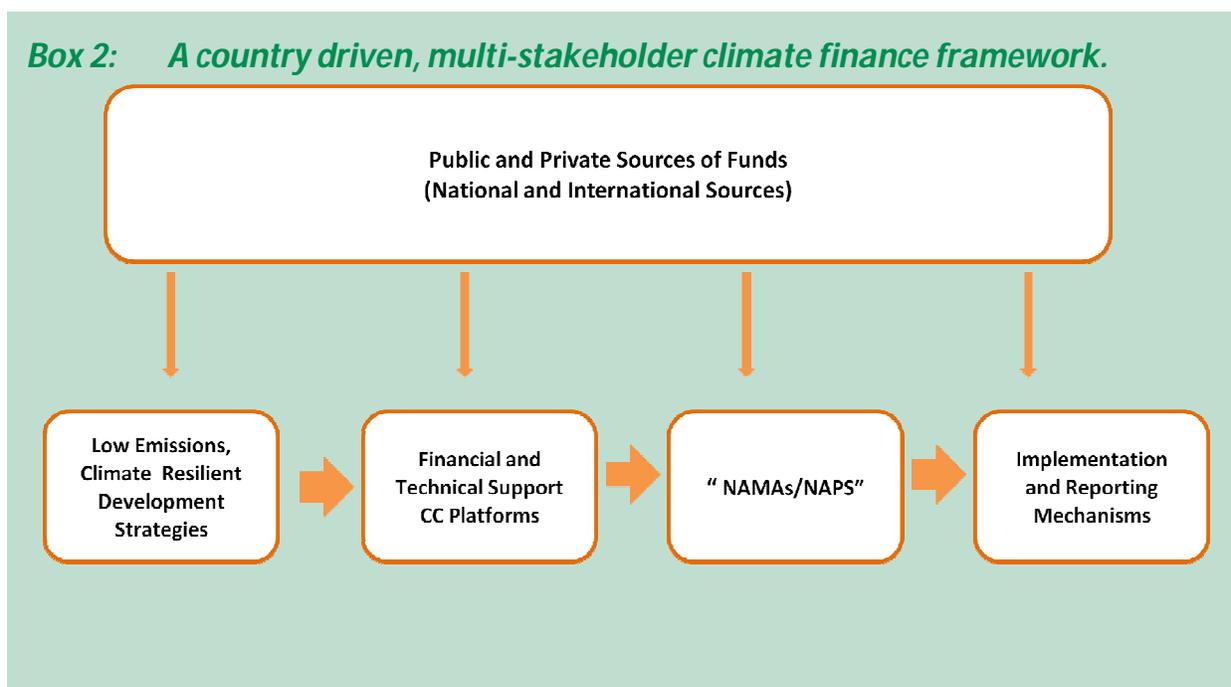
A Country-Driven, Multi-Stakeholder Climate Finance Framework

The previous section identified the key challenges to raising and delivering climate finance to where it is most needed. This section sets out UNDP's proposal for a country-driven, multi-stakeholder climate finance framework to address them.

As illustrated in Box 2 below, the proposed framework is built on four mechanisms at the country level. Each of the four mechanisms is designed to address one of the key challenges.

- **Formulation of low-emissions, climate-resilient development strategies.** To bring about national ownership from the bottom-up, a long-term outlook and to enable governments to make informed investment choices.
- **Financial and technical support platforms:** To catalyse the requisite scale of climate finance through a variety of public and private finance options.
- **NAMAs/NAP-type instruments.** To support balanced and fair access to international public finance.
- **Coordinated implementation and MRV.** To manage the unprecedented complexity of climate change management and to ensure an optimum delivery of climate funds.

Box 2: A country driven, multi-stakeholder climate finance framework.



This describes the typical set of activities that could be undertaken in a given emerging or developing economy under each of the four mechanisms. This framework is not intended to be prescriptive. The order of the mechanisms can be changed, and components within each mechanism adjusted or shifted around. Developing countries may pursue these activities independently, while others may seek support from the development community.

UNDP has been one of the largest sources of technical assistance in this area over the last two decades. UNDP could continue to support developing countries in this proposed framework. A few examples of relevant UNDP ongoing activities are highlighted in boxes throughout the text.

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1. Development of Low Emissions, Climate Resilient Development Strategies

The first mechanism in the framework will assist countries in preparing Low Emissions, Climate Resilient Development Strategies (LECRDS). They will help chart a development trajectory resilient to a range of possible future climate outcomes. These strategic exercises will promote country-driven, multi-stakeholder identification of priority mitigation and adaptation activities, including those based on ecosystem-management approaches, aligned to short and long-term national development goals.

An end product of the LECRDS, synthesizing its various components, will be a road map for national climate change activities. This national road map can then act as a valuable foundation for further action, including the remaining mechanisms in the framework.

Core components of the LECRDS could include:

- **Partnership and coordination structures.** The first activities under the LECRDS are to identify key stakeholders, including government officials, investors, community leaders and technical experts, and to put in place the structures for a participatory planning approach that accounts for synergies and trade-offs. Participation will be broad. As an illustration, water is needed to produce electricity and electricity is needed to produce water. Any low-emissions, climate-resilient planning exercise requires the participation of representatives from these two sectors as well as from all other relevant economic branches.
- **Climate change physical impact and vulnerability scenarios.** Climate change represents, in addition to any increase in mean global temperature, a dramatic increase in uncertainty. For example, for the western Sahel in Africa, some climate change models from the IPCC predict a significant drying while others simulate a progressive wetting with an expansion of vegetation into the Sahara. The prospective climate scenarios will identify possible climate conditions in a given location as a function of different GHG emission scenarios, and, as a result, assess current climate vulnerabilities and future risks. They will also enable the identification of vulnerable ecosystems that under changing climate may reach a “tipping point”, at which abrupt and irreversible changes may occur, disrupting the flow of ecosystems services essential for pro-poor development. In this way, these scenarios will help countries develop trajectories resilient to the range of possible climate outcomes.
- **Prioritization of mitigation and adaptation options.** This component involves the identification and prioritization of climate activities that respond to vulnerability and emissions patterns and also lead to the transformation of economies. The prioritization will be influenced also by the country’s natural capital, economic and social trends and the host nation’s evolving human development goals.
- **Initial assessment of policy and climate financing needs.** The LECRDS can develop a preliminary assessment of the policy and investment options to implement priority mitigation and adaptation activities. This can help assess the order of magnitude of investment, as well as the types of, and need for, policy change.
- **Low emissions and climate resilient ecosystems and development road map.** LECRDS road maps will set out priority mitigation and adaptation activities over a period of several decades. These road maps will detail not only the activities that need to be implemented by public authorities but also those involving other key stakeholders such as electric utilities, consumers, financial institutions and ecosystem-management practitioners. Critically for the fourth mechanism in this framework, they will identify internationally as well as domestically financed actions.

Overall, the LECRDS can be viewed as an iterative exercise. Our understanding of climate change and the effectiveness of climate finance will be constantly evolving. Long-term planning exercises such as LECRDS will need to be updated on a regular basis, every few years. Data from updated climate impact scenarios, as well as ongoing monitoring of climate activities, can thereby feed back into updated LECRDS.

The LECRDS mechanism described above, including its various components, builds on UNDP’s existing experience: first with UNDP’s assistance on National Communications to the UNFCCC in close to 140 countries over the past decade and second with its Territorial Approach to Climate Change (TACC) programme. Box 3 provides further information on this programme.

Box 3: UNDP's Support to the Formulation of Low-Emissions Development Strategies at the Sub-National Level

Despite the fact that 50-80 percent of greenhouse gas-emission reductions and the bulk of adaptation efforts will depend on decisions taken at the sub-national level, UNDP's research has shown that only a very small number of integrated climate policies and strategies exist at this level in developing and emerging countries. The vast majority of climate action is limited to individual mitigation or adaptation projects. Most successful municipal and community-based projects remain isolated efforts as they are not scaled up to the sub-national level.

Recognizing the critical need to leverage these experiences and insert them into a comprehensive policy framework, UNDP and UNEP, in association with UN-Habitat, UNITAR, UNCDF and FAO, have formed a partnership together with eight key networks of sub-national governments involving over 1,000 regions to help sub-national governments prepare low-carbon and climate-resilient development strategies.

Established in 2009, the programme "Down to Earth: Territorial Approach to Climate Change" (TACC) is the outcome of this partnership. During its pilot phase, it aims to support 10 sub-national authorities a year to develop projects that can meet local needs while building both the climate resilience and the infrastructure needed for low-carbon growth. The funding needed to establish a single sub-national low-carbon and climate resilient strategy is approximately \$1m, which is expected in turn to leverage an estimated \$30-50m in public and private investments.

The Programme has developed a set of methodologies for the preparation of low carbon and climate resilient strategies (climate change impact scenarios, prioritization of mitigation and adaptation activities, matching of public policies and financing instruments, etc.) that are not scale-specific and which complement activities conducted through National Communications to the UNFCCC.

2. Establishment of Financial and Technical Support Platforms

The second mechanism in the proposed framework involves supporting the establishment of in-country Financial and Technical Support Platforms. These platforms will be established at the initiative of national authorities and will bring together potential public and private partners, supported by relevant experts, to jointly assess and develop the priority activities identified in the road map of the LECRDS. They will enable the government to better identify the optimum mix of regulatory and public financing instruments required to attract catalytic financial flows toward low emissions, climate resilient development. Throughout, these platforms will provide a forum for a disciplined, pervasive investment-appraisal approach to proposed national climate priorities coupled with the necessary enabling technical assistance.

The end product of these platforms should be an advanced, policy-ready and investment-ready portfolio of activities.

Core components of the Financial and Technical Support Platform will be the following:

- **Bringing project partners together.** The platform will facilitate a detailed dialogue between stakeholders and interested actors for each climate activity detailed in the LECRDS road map. This will facilitate an accurate assessment of the real specific policy or investment needs.
- **Technical and financial expertise.** The platform will leverage and pool the expertise of a variety of stakeholders. Investors will be able to engage in dialogue with policy makers on regulatory changes required to support specific types of investments. Financial and technical assistance support institutions will be able to coordinate their respective activities. Finance experts can assist in bringing networks of investors with suitable risk appetites together and in identifying optimal investment mixes.

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- **An cross-the-board investment approach.** A common theme under the platform will be the consistent assessment of all activities from a rigorous, quantifiable investment perspective. This will allow investors, whether public or private, domestic or international, grant or concessional, to make informed decisions on where they invest. Such an investment-based approach can contribute to the overall transparency, effectiveness and efficiency of the framework.

The proposed Financial and Technical Support Platforms draw lessons from UNDP's experience in assisting developing countries to establish consultative mechanisms to support national endeavours.

3. Formulation of NAMAs/NAPs

The third mechanism within the proposed framework will involve putting in place a systematic approach to the formulation of "NAMA/NAP-type" instruments to access international climate finance. Based on the discussions facilitated through the Financial and Technical Support Platforms, each NAMA/NAP-type instrument will provide a detailed costing of the required incremental funding – as well as other design aspects – for each climate activity seeking international resource transfers, whether it involves policy change, capacity development or direct investment.

Depending on the final outcomes of the ongoing UNFCCC negotiations, NAMAs/NAPs could be highly varied in their scope, ranging from economy-wide mitigation goals to a specific project in a specific sector, landscape or ecosystem. As international finance might come from a multitude of sources, NAMAs/NAPs will likely need to be tailored to the specific requirements of each source of funds. This third mechanism of the framework will develop the capacity of countries to identify, access and blend different sources of climate finance with the required incremental funding spelt out in the NAMAs/NAPs. It will also help countries develop the required policies, institutions, data and partnerships to access these funds.

The components of this third mechanism will include:

- **Emphasis on high-quality NAMAs/NAPs.** Ensuring transparent and rigorous NAMA/NAPs will maximize the likelihood of receiving transfers. Such an approach is also aligned with the overall objectives of the proposed framework.
- **Full information and support.** Developing countries will need to be fully informed and supported on the range of available international public funds and instruments, as well as have a clear understanding of any submission and eligibility requirements for NAMAs/NAPs.
- **Feedback channels.** Funds and instruments will need to be responsive to the challenges developing countries may face in accessing resources. There will need to be facilitated channels to receive feedback and flexibility to act on such feedback.

In this proposed framework, the level of bottom-up ambition displayed by developing countries' NAMAs/NAPs will essentially reflect the level of commitment to mitigation displayed by developed countries and the financial tools developed to support it. For example, a tight cap on developed countries' emissions could stimulate the demand and development of innovative and far-reaching NAMAs in developing countries. These could include strategies that focus on investment in the ecological infrastructure for mitigation -- sustainable forest management (REDD), for example -- while securing ecosystem services that provide livelihoods to rural and indigenous communities. The proposed framework's emphasis on transparent, investment-based decision-making, together with feedback among the four mechanisms and regular updating of each country's LECRDS, is designed to facilitate an overall iterative process that allows for this matching process between the commitments of developing and developed countries.

UNDP is already a major source of technical assistance developing the capacity of countries to access and blend different sources of international climate finance to meet national goals. Box 4 provides a specific example of UNDP's approach to accessing and blending different sources of funds. This expertise can be leveraged to develop the capacity of countries to identify and match the different sources of climate finance with the required incremental funding spelt out in the NAMAs/NAPs.

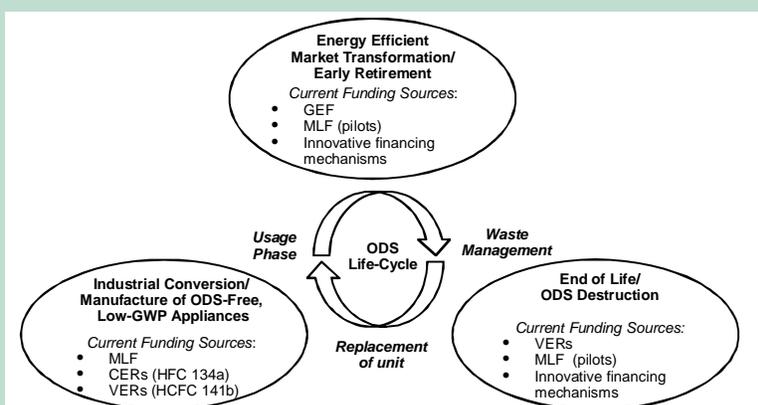
The fourth mechanism within the proposed delivery framework addresses the need for a coordinated implementation and reporting mechanism. This will be essential to the overall transparency, efficiency and effectiveness of the framework, notably for the internationally-supported NAMAs/NAPs.

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Box 4. UNDP's Approach to Blending Different Financing Sources for Refrigerator Life-Cycle Management

The management of refrigerators can have a large impact on the environment. Household electricity use can contribute up to 40% of national demand in developing countries. Ozone Depleting Substances (ODS), used as refrigerants, have a very high global warming potential and are often released directly into the atmosphere at a refrigerator's end-of-life. No single source of financing is currently available to incentivize consumers to purchase energy-efficient ODS-free refrigerators, to cover the incremental costs of re-engineering the production lines of domestic manufacturers to meet this new demand, and to collect and dispose of the ODS in old appliances. In the absence of this financing, the result is significant elevated energy consumption and high GHG emissions.

As set out in the figure below, UNDP is assisting developing countries to access and blend three sources of financing to better manage this environmental impact in the refrigerator life-cycle.



First, at the manufacturing stage, funding from the Multilateral Fund of the Montreal Protocol can assist manufacturers to switch from HCFCs to lower global warming potential refrigerants. Second, at the usage stage, funding from the GEF can help bring about energy efficient market transformation. Third, at the end of a refrigerator's lifetime, funding from carbon finance can cover the costs of financing the recovery and destruction of high global warming refrigerants.

Taken together, these various funding requests require a high level of familiarity with the – different – requirements of each funding source. UNDP can assist developing countries in formulating the necessary documentation and in meeting each source's various requirements in order that the finance can be successfully accessed.

4. Coordinated Implementation and Reporting Mechanism

The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment Report (IPCC, 2007), identifies policies, projects and programmes that could constitute a NAMA. A few examples of policies and measures are as follows:

- Economic incentives: phasing out subsidies, tax credits or feed-in tariffs for renewable power.
- Economic/fiscal measures: landfill, taxes on CO₂ or fuels.
- Regulation and standards: energy efficiency standards, bio-fuel standards and electricity market regulation; sustainable forest management and natural resource use regulations and enforcement.
- Market-based measures: green certificates and emissions trading; payments for ecosystems services.
- Ecosystem-based solutions: wetland restoration and banking; protected areas; land-use planning and management.
- Research and Development (R&D) for low-carbon technologies and demonstration projects.

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The Monitoring, Reporting and Verification implications of each approach would vary significantly, emphasizing the need for flexibility in implementation and reporting mechanisms while maintaining a consistent level of transparency, accuracy and conservativeness.

Accordingly, the implementation and reporting complexity of addressing climate change, over many decades and at scale, will pose an unprecedented challenge. MRV cannot be an after-thought but will have to be embedded throughout the entire proposed framework. In practical terms, the principal components of this fourth mechanism will include:

- **Consolidated set of success indicators, amenable to MRV.** LECRDS, Technical and Financial Support Platforms and NAMA/NAP-type instruments will all include appropriate indicators and results-based mechanisms necessary for an efficient gathering and reporting of monitoring data. These will need to be tailored to include ecosystem-based solutions and REDD strategies and to meet specific international standards. A consolidated MRV Plan will assess policy development, institutional strengthening and capacity enhancement required to implement the consolidated MRV Plan.
- **Inventory Management Systems.** GHG-emission inventories will constitute the backbone of any MRV system for climate mitigation actions. The National Communications to the UNFCCC could be used as a platform from which to build, to regularly 'review' and update/expand NAMAs/NAPs, and to verify their impact in terms of GHG-emissions reductions, disaggregated by funding source. These reviews will also permit the continued expansion of inventories to better capture emissions derived from ecosystems as emerging methodologies facilitate improved measurement of complex emission sources such as below-ground biomass, etc.
- **Financial management mechanisms.** Effective MRV systems require some degree of fund coordination and implementation at the national level. This ensures information and knowledge management on financial flows and associated emission reductions at the country level, and so supports the production of enhanced National Communications that may need to detail such information under a post-2012 climate regime. National Multi-Donor Climate Funds (MDCF) can be an effective option here. National MDCFs act as an institutional tool through which governments can put LECRDS in to practice through a reflexive process of implementation, information management/reporting, and an assessment of gaps and needs in fulfilling LECRDS. This helps cement the connection between LECRDS, national development and financial flows.
- **Project management mechanisms.** Enhancement of national project management capacity through a variety of direct access and/or project implementation services.

Over the past 13 years, UNDP has supported over 100 countries in developing their initial, second and third National Communications, and in building capacities to conduct national greenhouse-gas inventories and vulnerability assessments. Leveraging its national-level presence and fiduciary capacity, UNDP has also assisted a number a countries in establishing national financial management mechanism, acting as trustee of their National Multi-Donor Funds when required (see Box 5). Furthermore, UNDP is currently supporting the implementation of a portfolio of 1,000 climate change and ecosystems-management projects for a total of \$6 billion in 140 countries. UNDP is helping countries build on this experience to establish priority components of robust country-wide implementation and MRV systems.

Box 5: Cambodia Climate Change Alliance Trust Fund

The UNDP-Administrated Cambodia Climate Change Alliance Trust Fund and associated Support Programme will empower Cambodia's National Climate Change Committee (NCCC) to carry out its core functions of coordinating funds along national priorities and monitoring implementation. The Trust Fund was established in December 2009 and the programme was officially launched in February 2010. A significant component of funding will go towards building the capacity of the National Climate Change Committee (NCCC), an inter-ministerial body composed of 20 ministries, to better coordinate national policy making. This includes support for the preparation of a National Climate Change Strategy, the monitoring of its implementation and the move to a National programme based approach. The trust fund complements the move to a national programme by creating a harmonized engagement point for donors thereby minimizing transaction costs for government. It further aims to strengthen the emerging community of practice in government, private sector and civil society, enabling them to access the most up to date information, learning tools, resources and knowledge sharing services. The Trust Fund will also provide a demand driven grant facility to support climate change adaptation and mitigation initiatives by Government and Civil Society at national and sub-national levels. Priority will be given to supporting the implementation of the National Climate Change Strategy and those initiatives identified in the National Adaptation Programme of Actions. A Technical Advisory Panel (TAP) provides technical assurance and recommends proposals for funding from the trust fund. To date, the trust fund has received contributions from the European Union, the Swedish International Development Agency, the Danish International Development Agency and UNDP. It is envisaged that, ultimately, the responsibility for administering the fund will be transferred to the Government.

CONCLUSION

Businesses and households will account for over 80 percent of the additional climate investment required in 2020. Developing the capacity of developing countries to create conditions that allow markets and private investment flows to address pressing climate change needs - issues for which private funds are scarce - should be a priority for the international public finance to be provided to implement the Copenhagen Accord.

This paper proposes a climate framework to develop the capacity of developing countries to attract and drive investments towards low-emissions, climate-resilient activities in areas where they are most needed.

Each of the four mechanisms in the framework addresses a key challenge of climate finance: low-carbon, climate-resilient strategies to bring about bottom-up, nationally owned and internalized climate change actions with a long-term outlook; financial and technical support platforms to catalyse the requisite scale of climate finance; NAMAs/NAP-type instruments to achieve fair and balanced access to international public finance; and coordinated implementation and MRV to manage the unprecedented complexity of climate finance and to ensure a transparent, efficient and effective framework.

Establishing such a framework should be seen as an organic process. The understanding of climate change and the effectiveness of climate finance will be constantly evolving. National strategies will need to be updated on a regular basis. Data from ongoing monitoring of climate activities should feed back into strategy formulation and fund allocation.

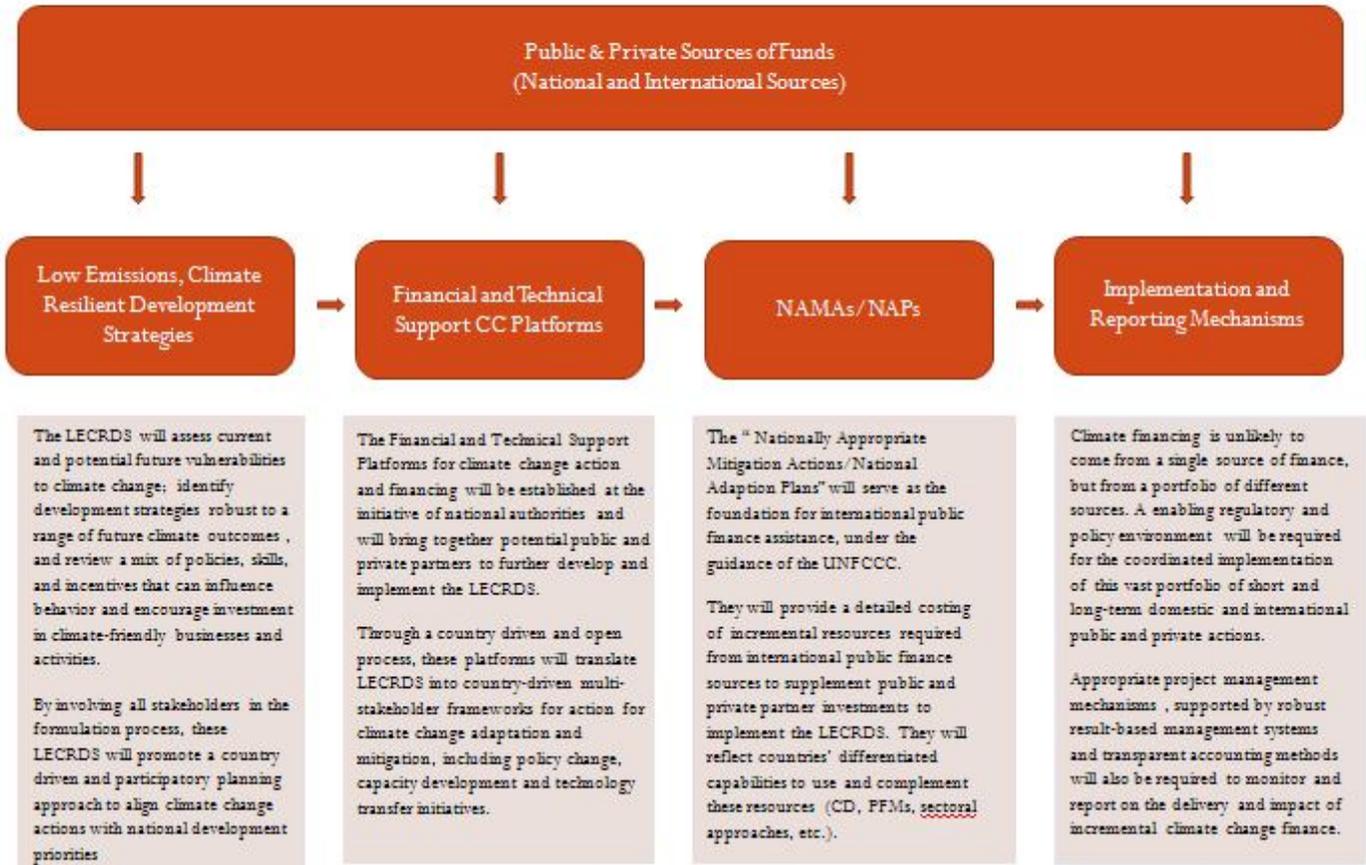
Options to invest scarce public resources to catalyse larger financial flows will also evolve. Early financial instruments, such as public-finance tools, will be designed to enhance national capacity to access later generations of more advanced financial instruments, such as carbon-finance and capital markets.

The design of the fund-mobilization mechanisms needed to implement the Copenhagen Accord will affect the level of ambition and the capacity of developing countries to scale up climate change efforts. A key objective of a climate change MRV should be to enable industrial and developing economies to constantly adjust ambitions and mechanisms. Hence, a climate finance framework must address fund mobilization and delivery in an integrated manner.

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