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**Community-based
Adaptation: Lessons from
the Development
Marketplace 2009 on
Adaptation to Climate
Change**

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Summary

The Development Marketplace 2009 focused on adaptation to climate change. This paper identifies lessons from the Marketplace and assesses their implications for adaptation support. Our findings are based on: statistical tabulation of all proposals; in-depth qualitative and quantitative analysis of the 346 semi-finalists; and interviews with finalists and assessors. Proposals were fuelled by deep concerns that ongoing climate change and its impacts undermine development and exacerbate poverty, migration and food insecurity. Proposals addressed both local poverty and climate change challenges, and offered a wide range of approaches to render local development more resilient to current climate variability. Therefore, support to community-based adaptation should: exploit its strong local grounding and synergies with development; help connect local initiatives to higher levels; and use complementary approaches to address policy issues.

Keywords: Community-based Adaptation, Development Marketplace, Adaptation, Climate Change

JEL Classification: O1, Q5

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The international workshop on “The Social Dimension of Adaptation to Climate Change” – jointly organized by ICCG, CMCC and FEEM - held on February 18-19, 2010 at Palazzo Querini Stampalia in Venice – has been a special occasion to face an emerging aspect of the climate change issue, the social dimension and the consequences of climate change for human societies.

This perspective has been neglected in climate change studies, even if in recent years a social science-oriented approach investigating social system dynamics and individual behaviour in connection with climate change has emerged and the importance to identify the impacts of the climate policy architecture on societies - and especially on the world’s poorest and most vulnerable people - is today included in the climate agenda.

A variety of scholars and practitioners enriched the debate on what social adaptation means in different contexts and geographical areas: the success of adaptation will largely depend on the extent to which individuals and societies will be willing to accept change and to adopt lifestyles and behaviours that reduce social-environmental vulnerabilities by improving adaptive capacities and resilience.

In order to overcome the existing trade-off between the two main avenues of climate policies, adaptation and mitigation, which labels adaptation as a local-based intervention while mitigation actions are seen as the first-best measures, the papers presented at the Venetian workshop contributed to highlight the importance of developing context-specific analyses as a complementary knowledge to reconcile climate actions with the development and growth agenda especially for vulnerable countries.

Climate research will be challenged in the near future by the need to develop an holistic approach to climate impacts, considering physical and environmental ecosystems as well as the human and social systems. This perspective will provide an effective foundation to adaptation to future climate change and will lead to the inclusion of equity and social justice issues into climate policies.

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Executive summary

For many years, climate change debates focused on the need to reduce greenhouse gas emissions. More recently, however, adaptation—how to better manage the impacts of ongoing climate change and prepare for projected future changes—has attracted the interest of donors, researchers and policy makers. Thus far, experiences with implementing adaptation have been limited, but given the increasing impacts of ongoing climate change, practical adaptation innovations are needed.

To spur innovations, the World Bank focused its 2009 Development Marketplace (DM2009) on adaptation to climate change. The Marketplace is a high-profile global grant competition administered by the Bank in partnership with multiple donors. A call for proposals was circulated globally for “innovative approaches and technologies that help us to prepare for and respond to the immediate and potential impacts of climate change.” Proposals were accepted in three sub-themes: resilience of indigenous peoples to climate change; adaptation projects with co-benefits; and adaptation projects promoting disaster risk management.

The purpose of this paper is to identify lessons from the Marketplace and assess their implications for the design and funding of adaptation. These lessons are relevant for development agencies that fund or implement adaptation projects, especially community-based ones. Our findings are based on: statistical tabulation of all proposals; in-depth qualitative and quantitative analysis of the 346 semi-finalists; and interviews with finalists and assessors.

We found that proposals were fuelled by deep concerns that ongoing climate change and its impacts undermine development and contribute to poverty, migration and food insecurity. Proposals addressed both local poverty and climate change challenges and offered a wide range of approaches to render local development more resilient to current climate variability. Therefore, support to community-based adaptation should: exploit its strong local grounding and synergies with development; help connect local initiatives to higher levels; and use complementary approaches to address policy issues.

Findings and implications are summarized below.

Key findings

Most grant seekers expressed concern that climate change is already affecting their communities. Marketplace participants sought to address already occurring climate change impacts. They focused on climate variability and extreme weather events, citing water scarcity, drought, flood, saltwater intrusion and storm surges as the most common climate change risks. They stressed how climate change is aggravating existing vulnerabilities, exacerbating poverty, migration and food insecurity, and threatening the survival of indigenous peoples. The identities

of indigenous peoples are tied to ancestral lands and livelihoods that depend on natural resources, which are at acute risk from climate change.

Proposals were well-grounded in local development challenges. Proposals addressed local poverty and environmental issues, relied on local knowledge and local actors, and sought to improve local management of weather events. Many participants emphasized how rural livelihoods are being rendered less productive, more unstable and more prone to disasters by ongoing climate change. They stressed how lack of assets and education undermine communities' adaptive capacity. Proposals focused on participation and capacity building of community members and aimed to build resilience, while also addressing poverty and other development challenges.

Few grant seekers relied on formal scientific data or projections. Proposals relied on local knowledge of climate, ecosystems and livelihoods. Perceptions of ongoing climate change had been gathered informally and were rarely verified. The focus on better managing current weather variability meant that grant seekers saw little need for formal climate projections. The few proposals that did cite formal climate science often came from academic institutions, and their project ideas were more removed from local challenges than those of other grant seekers.

Proposals conceptualized adaptation as addressing local development challenges. Proposals aimed to address both development issues and climate variability. Many grant seekers were small civil society organizations from developing countries looking for funding for their community-based work, which would simultaneously address: poverty and underdevelopment; environmental and resource degradation; and rising climate variability. They saw these as interconnected challenges in need of being addressed at the community level and proposed incremental steps to build adaptive capacity and community resilience.

Most proposed several adaptation actions and emphasized 'soft' adaptation. The average proposal contained three distinct actions, mixing hard (infrastructure, data systems, technologies) and soft (training, capacity building, awareness raising) approaches. Soft adaptation represented more than three-quarters of all proposed actions. The most common adaptation actions were capacity building, livelihood diversification, ecosystem restoration and local small-scale infrastructure. Grant seekers often proposed adaptation actions similar to topics they were already working on and in communities where they already had a presence.

Rural areas and rural development issues dominated. Two-thirds of semi-finalists focused on rural areas. Livelihood diversification was a major theme and often focused on crops, livestock, fisheries, non-food products and household energy. There were also many natural resource management proposals focusing on loss of livelihood productivity and adverse health and nutrition effects resulting from ecological damages, which were worsening due to climate change. Other common themes included use of indigenous knowledge, and drought and flood management.

The Marketplace showcased a wide range of options for pro-poor and community-based adaptation, but also indicated some challenges. Poor rural areas were well-represented, as were indigenous peoples. Many proposals addressed gender issues, people living in remote locations and community mobilization. DM projects were typically intended to cover a few thousand beneficiaries in confined geographic areas within the limits set by the DM (\$200,000 maximum budget and two-year implementation period). Proposals rarely contained clear plans for scaling up or continuing after the end of the two years. They also missed opportunities for systematic linking to governments or establishing revenue streams.

Assessing innovation proved challenging. Assessors and jury members had little problem with assessing quality, but measuring innovation proved more difficult. While the Marketplace defined innovation as globally new project concepts, transfer of concepts from one location to another did not qualify according to the guidelines. This definition was sometimes hard to enforce in practice because assessors often found it difficult to verify whether project ideas were globally new. Some assessors did not distinguish sharply between project quality and innovation or argued that quality is ultimately more important than innovation.

Implications for development agencies and governments promoting adaptation

Support to community-based adaptation should exploit its core strengths in: local grounding and synergies with development; helping connect to knowledge and funding at higher levels; and use of complementary approaches in addressing policy issues.

Support for adaptation should play to the strengths of community-based approaches, in particular local grounding. Small community-based projects are a viable means of supporting adaptation and many CSOs are ready to supply such projects, although some regions may need to build the capacity of potential providers. Core strengths of Marketplace proposals included: grounding in local socioeconomic and climatic realities; use of local knowledge; and synergies between adaptation and development. Adaptation funding regimes should seek to exploit and promote these strengths, and communities should be involved in identifying local causes of vulnerability and in devising responses.

A flexible approach to funding adaptation is required as many projects will look similar to ‘traditional’ development. Adaptation cannot be delinked from development. Thus, support for adaptation should allow projects to address both development and climate change challenges, including current climate variability and extreme events. Anchoring to formal climate science and down-scaled projections should not be expected. The issue is whether there is heightened vulnerability due to climate change and whether projects adequately address this, not whether projects address a scientifically ‘correct’ climate risk. Project quality must remain priority and monitoring and evaluation should be used to assess the factors that influence outcomes.

Community-based adaptation could be bolstered by mechanisms that connect it to knowledge and funding at national and international levels. Local organizations involved in

adaptation may not be able to scale up, nor will they necessarily connect to centers of expertise. Therefore, knowledge networks are important, as are mechanisms for linking local and formal scientific knowledge. Over the long run and when attempting to reach scale, the totality of near-term actions must address key long-term risks projected by formal climate science.

Funding networks are needed to support replication and scaling up. Community-based adaptation would integrate well with existing community-driven development platforms. These would involve communities in planning and executing small local development projects, while relying on a central agency to channel funding and supervise technical and fiduciary aspects.

Project-based interventions can be complemented by addressing policies, programs and public goods of importance to adaptation at higher levels. Some policy areas, including social protection and micro-finance for adaptation, are often best promoted at the national level. In addition, policies that foster maladaptation, such as underpricing of water and tenure insecurity, must be identified and addressed at the national level. Public goods, such as crop and livestock breeding or climate data, are best provided at the higher levels as well.

1: Introduction

For many years, debates around climate change have focused exclusively on the need to reduce greenhouse gas emissions. Yet the last few years have seen mounting evidence to support the view that adverse impacts of climate change are already occurring, especially in developing countries. While the development community has begun paying more attention to adaptation, greater effort is required. Both the increasing atmospheric accumulation of greenhouse gases and the scientific certainty of adverse impacts require urgent action (Parry et al, 2007). Developing countries will feel these adverse impacts of climate change sooner and more severely than developed countries, but are the least prepared to address them. Therefore, they require assistance in managing the risks from climate change at a scale and with approaches previously unattempted (World Bank, 2009; Stern, 2006).

Several funding mechanisms for adaptation to climate change in developing countries have already been created or proposed, but experience with setting adaptation priorities is limited. Practical adaptation experience stems mostly from the National Adaptation Programs of Action (NAPA) developed by many low income countries (Agrawal and Perrin, 2008) and from community-based adaptation (see IISD summaries of international community-based adaptation conferences, and Sperling, 2008). However, there has been little experience in climate-resilient development across sectors and at scale.

Community-based adaptation is a promising way to manage the risks associated with climate change, as it can empower communities and offer synergies with broader poverty and sustainable development objectives (Heltberg, Siegel and Jorgensen, 2009). It is also likely to be pro-poor in the sense that it reduces vulnerability of the poor faster than of the non-poor (see Tanner and Mitchell, 2008, and the papers therein, particular Vernon, 2008).

Better understanding of community-based adaptation is therefore required. What are the characteristics of good projects donors should be looking for? What is the relationship between adaptation and development? What types of climate change risks can successfully be addressed by community-based adaptation and what types of climate science and knowledge should be used to identify those risks? How can small projects be scaled up and connected to national strategies and policies?

The Development Marketplace (DM) is a global grant competition administered by the World Bank in partnership with multiple donors and held annually with varying themes. Development Marketplace 2009 (DM2009) focused on innovation for adaptation to climate change; this theme was chosen to raise the profile of adaptation, identify innovative approaches that can inform country adaptation strategies, and build bridges to civil society, private sector and other

organizations. The 2009 Marketplace was jointly managed by the World Bank Institute and the Environment and Social Development Departments. It offers useful lessons and helps answer the questions posed above.

There were 1755 proposals in response to the call for innovative approaches and technologies that help prepare for and respond to the immediate and potential impacts of climate change. Proposals had to identify “innovative, early stage projects in climate adaptation with potential to be replicable, sustainable and generate long-term impact” within three sub-themes: (1) enabling indigenous peoples to improve their adaptation to climate change; (2) providing adaptation co-benefits for sustainable resource management measures, including biodiversity conservation; and (3) supporting actions that build on and address disaster risk management, while improving community resilience to climate change (see Box 1).

This paper aims to identify lessons from the Marketplace and assess implications for the design and funding of adaptation. Because of the similarities between Marketplace proposals and community-based adaptation projects in general, these lessons are relevant for the World Bank and other development agencies and governments that fund or implement adaptation. Our findings are based on statistical tabulation of all the proposals, in-depth qualitative and quantitative analysis of the 346 semi-finalists, and interviews of finalists and assessors.

Proposals reflected acute concerns that ongoing climate change, in particular floods and droughts, is already undermining development, and exacerbating poverty, migration and food insecurity. They addressed both local poverty and climate change challenges and offered a wide range of approaches to render local development more resilient to current climate variability.

This paper is structured in five sections. The remainder of this introduction describes the grant competition and data. Section 2 describes the climate risks and development challenges that grant seekers sought to address. Section 3 analyzes proposed adaptation responses. Section 4 reviews how innovation for adaptation to climate change was conceptualized, and Section 5 discusses implications for adaptation support. Annexes contain background documentation and the results of a regression analysis of determinants of projects advancing from the semi-finalist to the finalist and winning stages.

The competition

Beginning in 1998, the DM has taken place nine times and has achieved worldwide penetration. In addition, regional and national Development Marketplaces have taken place. The 2009 Marketplace was held in partnership with the Global Environment Facility, the government of Denmark and the International Fund for Agricultural Development. The DM Secretariat has developed an extensive outreach network over the years, which it used to circulate the call for proposals to relevant parties worldwide, supplemented with targeted outreach efforts to indigenous peoples’ communities.

Of the 1,755 proposals, 346 were chosen as semi-finalists, 100 as finalists and 26 as winners in successive assessment rounds. Assessors included professional staff and managers from the World Bank, donors to the Marketplace, NGOs, academia, and the private sector. Winners were awarded up to \$200,000 to implement projects over two years. All applicants were subject to eligibility criteria, varying by sub-theme, and related to organizational type and nationality, partnership requirements, and proposal language. The criteria are described in Annex 3.

Box 1: DM2009 Sub-themes

<p>Sub-theme 1: Resilience of Indigenous Peoples Communities to Climate Risks Promoted indigenous peoples communities and organizations to develop innovative adaptation projects with a preference for those targeting women and youth. Projects were selected for their ability to: conserve indigenous knowledge in agriculture, land, and water and soil management; increase indigenous peoples’ resilience to climate change; or apply innovative adaptation plans and communication strategies based on indigenous systems to accelerate learning and knowledge sharing on climate change adaptation.</p> <p>Sub-theme 2: Climate Risk Management with Multiple Benefits Promoted adaptation projects with multiple social and environmental benefits. Projects were selected for their ability to: create low-cost strategies that spread climate risk beyond the local level (i.e., trade and value-chain improvements; micro-finance); forge innovative partnerships to build adaptive capacity of vulnerable communities (i.e., increasing access to climate risk management knowledge, information and services); or use innovative means to empower communities to take action on climate risks. Preference was given to projects targeting vulnerable groups, such as women, children and the elderly.</p> <p>Sub-theme 3: Climate Adaptation and Disaster Risk Management Promoted innovation in responding to natural disasters linked to climate change beyond the local level. Projects were selected for their ability to: develop innovative arrangements, such as social safety nets or micro-insurance; diffuse climate risks faced by the poor and vulnerable; create low-cost spatial planning, housing or local infrastructure resistant to climate-related disasters; improve communities’ capacity to use multi-hazard risk information for early warning; or use other community-based responses to climatic extremes and climate change.</p> <p><i>Source: DM2009 Competition Guidelines (www.developmentmarketplace.org)</i></p>
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As mentioned, the three sub-themes focused on indigenous peoples, adaptation with co-benefits and disaster risk management. The co-benefit sub-theme received half the proposals, with the other two sub-themes sharing the remainder (Table 1). The regions with the most proposals were Africa (30%), Latin America and the Caribbean (25%), South Asia (22%), and East Asia and the Pacific (14%) (see Table 2). Fewer proposals came from Eastern Europe and Central Asia (5%) and the Middle East and North Africa (1%), in part reflecting weak civil society capacity in some of those regions.

Table 1: Intake by sub-theme

Sub-theme	No. of grant seekers	Share of intake (%) n=1,755
Resilience of Indigenous Peoples Communities to Climate Risks	419	23.8
Climate Risk Management with Multiple Benefits	903	51.5
Climate Adaptation and Disaster Risk Management	433	24.7
Total	1,755	100.0

Source: The original DM intake database.

Table 2: Region of project implementation

Region of Project Implementation	No. of grant seekers	Share of total
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		(%) N=1,755
Africa	525	29.9
Latin America and the Caribbean	446	25.4
South Asia	390	22.2
East Asia and the Pacific	248	14.1
Eastern Europe and Central Asia	82	4.7
Multiple Countries	39	2.2
Middle East and North Africa	24	1.4
Total	1,755	100.0

Source: The original DM intake database.

Table 3: Regional distribution of project implementation by sub-theme

Region	Resilience of Indigenous Communities to Climate Risks		Climate Risk Management with Multiple Benefits		Climate Adaptation and Disaster Risk Management	
	No. of proposals	Share of total (%)	No. of proposals	Share of total (%)	No. of proposals	Share of total (%)
		N=1,755		N=1,755		N=1,755
Latin America and the Caribbean	141	8.0	198	11.3	107	6.1
Africa	132	7.5	292	16.6	101	5.8
Eastern Asia and the Pacific	68	3.9	124	7.1	56	3.2
South Asia	54	3.1	205	11.7	131	7.5
Eastern Europe and Central Asia	15	0.9	42	2.4	25	1.4
Middle East and North Africa	5	0.3	15	0.9	4	0.2
Multiple Countries*	4	0.2	27	1.5	9	0.5
Total	419	23.8	903	51.5	433	24.7

*includes one unclear entry

Data sources for this paper

Our database is one of the largest compilations of proposed adaptation projects.¹ It contains both variables that grant seekers self selected as part of the application process, as well as variables manually coded by the author team. We did our coding by reading through all 346 semi-finalist proposals, creating variables describing climate risks identified in the proposals. These included the type, scale and scope of the proposed adaptation interventions, and references to governments and beneficiaries. Annex 4 contains the complete list of variables. Additional qualitative insights were derived from textual interpretation of the proposals, structured interviews with finalists at the DM event held in November 2009 in Washington, DC, and roundtable discussions with proposal assessors.

Much of the analysis beyond basic statistics is based on the 346 semi-finalist proposals, which are most likely to yield relevant insights. Proposals eliminated prior to the semi-finalist stage were deliberately excluded, as many did not propose adaptation, were low quality, or lacked

¹ Another database of proposed adaptation projects is the UNFCCC database of NAPA adaptation proposals. As of September 2009, it contained approximately 400 proposals. While NAPA projects are proposed by governments, the DM proposals were submitted mostly by non-governmental actors.

innovation. The semi-finalists' proposals, in contrast, passed the basic criteria of relevance, innovation and quality.

Grant competition data must be interpreted with caution. Proposals were sometimes shaped in important ways by the themes and language used in the competition guidelines. They generally shared the emphasis on indigenous knowledge, livelihood diversification and disaster risk management. Some went further and echoed particular phrases used in the call for proposals, such as emphasizing adaptation that could deliver multiple benefits. Moreover, factors such as internet access, membership of information networks, prior participation and language skills likely influenced participation. Undoubtedly, the funding ceiling of \$200,000 and the two-year time horizon for implementation influenced the type and scale of projects proposed.

2: Climate Change Risks, Impacts and Adaptive Capacity

The experience of the Marketplace offers insights relevant to many discussions in the literature on adaptation to climate change. These include, for example: discussions about what types of risks associated with climate change can and cannot be addressed by community-based adaptation; the relationship between adaptation and development (Schipper, 2007); the choice between addressing new risks associated with anthropogenic climate change or current climate variability; the limits to adaptive capacity (Adger et al, 2009); and the role of formal climate science and community perceptions in adaptation planning (Van Aalst, Cannon and Burton, 2008).

This section discusses how grant seekers perceived climate change and its impacts. In particular, it focuses on: the types of climate change risks they addressed; sources of climate information; impacts of climate change; and factors limiting adaptive capacity.

Proposals were driven by acute concerns that ongoing climate change is: undermining the productivity of rural livelihoods; worsening existing vulnerabilities; causing poverty, migration or conflict; and threatening the cultural survival of indigenous peoples. Current climate variability already affecting vulnerable communities was the prime concern, rather than projected future impacts. Grant seekers relied on informal information sources and rarely used formal climate science. They discussed how weaknesses in adaptive capacity stem from poverty, environmental degradation and population growth, and proposed actions to build general resilience.

Types of climate risks

What types of climate change risks did proposals identify and seek to address? Increasing current climate variability was emphasized, and drought, flood and storms were the most frequently identified risks.

Grant seekers describe both new and current climate risks

Grant seekers saw climate change as a closely linked extension of problems associated with managing current climate variability. We coded the types of climate risks identified in the proposals, distinguishing between current climate variability and new risks clearly linked to climate change (as stated by proposal writers). Current climate risks included droughts, floods and large variations in temperature and precipitation. They were often described as serious local challenges, which are on a distinctly worsening trajectory because of ongoing climate change. Of the 346 semi-finalists, 24 percent sought to address a combination of new and current climate

risks. Fifteen percent addressed current climate variability only, 19 percent addressed entirely new risks associated with climate change, and 43 percent were ambiguous (Table 4).

Table 8 provides examples of how these risks were phrased. There were few instances of distinct thresholds for physical systems being crossed. Rather, the more common concern was of worsening trends in climate leading to serious socioeconomic impacts. Regression analysis presented in Annex 5 shows that proposals that identified a new climate change risk (either alone or in combination with current climate issues) had above-average probability of advancing to the finalist and winning stages. This might be a reflection of assessors looking for clear justifications rooted in climate change.

Table 4: Grant seekers' identification of new and current climate risks, by region

Climate risks identified	Latin America and the Caribbean	Africa	South Asia	East Asia Pacific	Eastern Europe and Central Asia	Multiple Countries	Middle East North Africa	Total	Share of total (%)
									n=346
Clearly new risk	23	11	15	9	4	2	0	64	18.5
Pre-existing/current risk	11	15	13	12	0	0	2	53	15.3
Both new and pre-existing	25	19	20	13	4	0	1	82	23.7
Unclear/ambiguous	45	36	28	22	7	7	2	147	42.5
Total number of proposals	104	81	76	56	15	9	5	346	100.0

Source: authors' coding of all DM semi-finalist proposals.

Multiple climate-related risks identified

Grant seekers often identified multiple climate risks. Proposals listed up to five distinct climate-related risks, while the average was two risks (Table 5). One proposal, for example, identified risks associated with: glacier melting; modification of coast morphology; changes in rainfall and drought patterns; and increased occurrence of wildfires, landslides and floods. When two or more risks were identified, they were often interrelated. Sometimes proposals set out to address multiple risks collectively, while at other times they merely invoked a multiplicity of climate risks as general justification for their grant proposal. Quite a few (around one-third) were ambiguous as to exactly what risks they sought to address.

Table 5: Number of climate change risks identified per proposal

Number of Climate Risks Per Proposal	Number of Proposals	Share of total (%) n=346
Not clear, ambiguous, no clear climatic risk	110	31.8
1	91	26.3
2	84	24.3
3	38	11.0
4	18	5.2
5	5	1.4
Total	346	100.0

Source: authors' coding of all DM semi-finalist proposals.

Water-related risks dominate

Water-related risks were the most common, accounting for 38 percent of risks identified by semi-finalists (Table 6). Drought, floods, unpredictable rains and glacier melt-off were common water-related concerns. Storms, at 21 percent, were the second-most common type of risk. Concerns over heat, warming and heating-related fire risks constituted 8 percent of all risks, while concerns over cold temperatures constituted 4 percent. Climate variability and weather extremes constituted around 6 percent. Land-related risks, such as erosion, desertification and landslides constituted only 3 percent, a surprisingly low figure.

Table 6: Climate risks identified by grant seekers

Climate risk	Description	Share of total (%)
Climate variability	Noted variability in temperature patterns; Changes in seasonal onset	2.9
Temperature and other weather extremes	Extreme vacillations in temperatures and/or temperature patterns (i.e. unusually extreme heat or extreme cold); Extreme vacillations in weather patterns.	2.8
Unpredictable weather	Generically referred to unpredictable weather patterns by applicants	1
Storms	Storms; Windstorms; Typhoons; Hurricanes etc; Other storms	21.1
Heat-related	Fires; Heat; Warming; Heat waves; Other heat related	8.0
Cold-related	Cold; Snow; Freezing; Hail	4.3
Water-related	Drought/Less Rainfall; Floods; Floods and Drought; Glacier melt off; Erratic and Excessive Rainfall; Other water related	38.2
Land-related	Desertification; Landslides; Erosion; Avalanches; Other land related	2.9
Crop Pests and Animal Diseases	Crop Pests; Animal Diseases	0.7
Human health	Diseases affecting humans	0.2
Not Clear	Not clear; Not linked to climate change; Other	17.8
Total number of risks identified		578
Total number of semi-finalist proposals		346

Source: authors' coding of all DM semi-finalist proposals. Note: many proposals listed more than one climate risk and some proposals did not clearly list any one specific climate risk; the latter ones are in the "not clear" category.

Sources of climate information

What sources of information were used to identify climate change risks? We found that proposals rarely relied on formal climate science and instead used informal local and indigenous sources of knowledge. Proposals often sought to address climate-related problems as they exist today based on the premise that those problems are bound to get worse. Rising uncertainty and variability of climate was explicitly addressed in some cases, for example, through early warning systems or use of indigenous climate knowledge.

Pragmatic depictions of worsening climate trends dominated

Many grant seekers were pragmatic and used oral histories and community knowledge to describe worsening climate trends. There was often an intuitive scenario in droughts, floods, natural disasters, etc. were perceived to continue on a worsening trajectory into the future. 'Business as usual' was seen as becoming even more unsustainable in the future. Indigenous knowledge of climate patterns and adaptation mechanisms attracted considerable interest.

It was often unclear how carefully grant seekers had researched formal or informal knowledge on climate trends, as no formal mechanism was used by the Marketplace to assess if stated perceptions of climate change were correct. However, one proposal (#4311) took a more formal approach to climate uncertainty. Grant seekers were aware of general climate studies and projections but did not have down-scaled data. They proposed participatory stakeholder engagement to map climate change risks and social vulnerability profiles. Adaptation actions would be designed based on the findings. This proposal was exceptional in its careful approach to identifying climate change impacts using participatory techniques.

Formal sources of climate information rarely used

We did not get a sense that climate science guided problem identification by grant seekers. Climate models, scenarios and projections were generally not featured, except in a few instances where a research institution was involved. Typically, the level of detail was a general perception of worsening weather patterns (more droughts or floods compared to earlier decades). As a reader of proposals, one sometimes had the impression that problem statements (“drought is a major problem in our community”) were reliable, but that trend and attribution statements (“drought is worsening due to climate change”) were anecdotal.

One exception, an NGO from Bolivia and one of the Marketplace winners, used down-scaled climate data to design its project. Using regional climate data and sophisticated modeling, this grant seeker partnered with the government to map projected increases in fire risk. They proposed training of landowners and communities in brush burning techniques. Relevant local data permitted fine-tuning the project design closely to exposed communities (proposal #5108). This proposal was exceptional in its use of formal climate science and raises the question of the degree to which down-scaled climate data might enhance the effectiveness of community-based adaptation.

Limitations to formal knowledge, even if available

Discussions with finalists shed additional insight on the limited use of formal climate science in proposals. Most grant seekers had expertise in development, but not in climate science. They did not have access to formal climate data or they felt the data was not relevant to them. A competition winner whose organization builds disaster-proof housing in the Sahel expressed the view that climate projections available for his area are outdated and do not speak to current climate phenomena. Others felt that the presentation of climate science information is too technical to be readily accessible and useful.

Some struggled with how to avoid being overly alarmist. They were aware of projections of severe deterioration in climate conditions for their regions, but struggled with finding ways to convey this to community members without causing panic. Instead, they sought to convey information in a manner that would empower communities, such as by presenting information on adverse future impacts of climate change together with ideas on how to adapt to them.

Adverse impacts

Reviewing the impacts of climate change described in Marketplace proposals, we found a systematic pattern of acute concerns over worsening rural vulnerability, indigenous survival and food security.

Proposals illustrated strong concerns that ongoing climate change will continue to worsen local vulnerabilities unless addressed through adaptation. Grant seekers described a wide range of adverse socioeconomic impacts of climate change: poverty; food insecurity; conflict; migration; environmental degradation; natural disasters; water shortages; spread of disease; etc. None described positive impacts. The most commonly described impacts were on natural resources and rural livelihoods dependent on agriculture or forest resources, and were often closely linked with concerns regarding poverty and food insecurity. A proposal from Ethiopia, for example, described how insufficient water, erratic rains and changing patterns of droughts cause food production to collapse and result in endemic food insecurity (proposal #5075). Migration and social dislocation triggered by worsening poverty were also major concerns. In contrast, relatively few grant seekers emphasized impacts on the built environment such as infrastructure and housing (see statistics in Table 7 and examples of socioeconomic impacts in Table 8).

Table 7: Major socioeconomic impacts of climate change of concern to grant seekers (random sub-sample of 135 semi-finalists)

Impact of Climate Change	No. of proposals	Share of total (%) n=135
Natural resources (e.g., water, biodiversity and the coastal environment)	48	35.6
Unbuilt environment (e.g., agriculture or forestry)	45	33.3
Social dislocation (e.g., migration, poverty, general references to social vulnerability)	15	11.1
Health	10	7.4
Not clear	9	6.7
Built environment (e.g., infrastructure or housing)	8	5.9
Total	135	100.0

Source: authors' coding of a random subset of 135 semi-finalists.

Table 8: Examples of biophysical and socioeconomic impacts of climate change in various regions

Africa	Latin America and the Caribbean	East Asia and the Pacific	Eastern Europe and Central Asia	South Asia
Reduced vegetative cover and organic matter; declining soil quality	Shifting ecosystem borderlines	Increase in the numbers of floods and landslides	Snowmelt; landslides	Depleting ground water; decreased health; increase in mosquitoes
Increase in crop pests and insects; diseases; weeds; crops threatened	Erosion of beaches and coastlines	Siltation of coasts	Delayed freeze	Wave induced erosion
Increased number of natural disasters	Water table increase; decrease in mobility; increase in vector-borne diseases; damages to homes; restrictions on productive activities	Salt water intrusion	Deteriorating health of vulnerable populations; negative social and economic impact	Saltwater intrusion (mentioned by many)
		Saline intrusion increase; decreased productivity of cash crops; increase in poverty levels		Salinization of soil and water; lack of fresh water in dry season
				Increased floods, droughts and cyclones

Coral mortality increase	of the community	Flooding; Coastal abrasion		Loss of fish; compromised cultivation of forests; water salinity increase; River erosion
Decrease in water sanitation for the most vulnerable; frequent natural disasters	Cut off energy supply (delivery of gas) and wetting of food fuel	Storms and tidal surges.		Swelling of glacier lakes
Pastoralists' lifestyle affected; water scarcity	Flooding; snow melt; income loss; disruption of food supply chain	Damage to Housing made of light materials		Glacier melting;
Decreased crop yield; livestock death; decrease in available fodder; deforestation; decrease in source of electricity	Disappearance of glaciers; warming of highlands; expansion of agriculture	Coastal degradation		Floods and landslides
Shrinking agriculture and environmental productivity	Fearful of projected water shortages	Rainwater harvesting, on which 15% of the population is dependent, will become more difficult.		Disease; mosquitoes; lack of buffer for disasters
Change in rainfall patterns; siltation; decrease in water tables	Decrease in water basin charge; increased incidence of fires; longer dry seasons; torrential rain and floods	Livelihoods compromised with no perceived alternatives		Destruction of homes
Increased food insecurity	Decreased soil quality; unfavorable farming; reduced reliability of traditional knowledge	Destroyed crops and villages		Flash floods; erosion; migration; displacement and erosion of livelihood options
Food and production system collapse; increased food insecurity	Decreased farm production	Death; nomadic livelihoods down; increased in animal death; income down		Early fruiting; landslides; new crop diseases
Crop loss; productivity loss	Disease and poverty	Death		Reduced crops and vegetation; lack of water; housing damage; migration; conflict over land and water
Migration of work force; sale of livestock; decrease in adaptive capacity; water scarcity	Negative economic and social impact	Food insecurity		Crop failures; food stress
Inter-community conflict; deprivation	Increase the risks of those already vulnerable			River erosion; loss of life; livelihoods compromised
	Migration and poverty			Fragmentation of society; conflict; decreased resilience of indigenous peoples

Source: selected by authors from select semi-finalist proposals, using proposals' own wording. Examples of biophysical impacts are listed at the top and socioeconomic impacts at the bottom.

The stakes were higher for indigenous peoples, who expressed how their identity and cultural survival is threatened by climate change. Their proposals identified natural resource degradation and food insecurity, often in the high mountains or forests where they live, similar to those in the other sub-themes. But there were also deep concerns over their survival as distinct peoples with their own cultural identity and language. These concerns were often described as pre-existing issues magnified by climate change. For example, reduced productivity of traditional rural livelihoods due to climate change triggers migration from ancestral areas. Outside ancestral areas, indigenous culture is hard to sustain because of discrimination and social exclusion. They also expressed pride in traditional knowledge, such as using weather patterns to time planting and harvesting, and were eager to harness it for adaptation purposes. This would often require

investments in making indigenous knowledge useful, for example by training the younger generation.

Health issues emerged in proposals in various ways. In a narrow sense, health and disease risk did not figure prominently among direct climate risks. All combined, human, crop, and livestock health and disease constituted 1 percent of identified physical climate risks. Yet, in a broader sense, some 83 proposals (24 percent of all semi-finalists) discussed health, nutrition and food security issues as part of the problem statements or as adverse impacts resulting from climate change. For example, many proposals emphasized declining standards of nutrition as a consequence of declining crop yields and deterioration of rural livelihoods resulting fully or partly from climate change. Others emphasized how HIV/AIDS, diarrhea and other diseases undermine community resilience and adaptive capacity.

Poverty, environmental degradation and population growth weaken adaptive capacity

How did proposals describe communities' adaptive capacity? Grant seekers almost invariably emphasized how the interplay of climate shocks with weak adaptive capacity results in vulnerability, which is a product of both climate and non-climate issues rooted in local conditions. Proposals often sought to address the causes of weak adaptive capacity, which was discussed jointly with climate change, as, together, they cause the adverse impacts. Impacts on physical and ecological systems were thus rarely described in isolation from impacts on socioeconomic systems. Not surprisingly, proposals state that adaptation interventions may help avert increased vulnerability.

Grant seekers almost invariably emphasized how the interplay of climate shocks and development challenges heighten community vulnerability. They also described how poverty, environmental degradation and population growth constrain and weaken communities' adaptive capacity. This echoes much of the academic literature (e.g., Adger, 2006; Reid and Vogel, 2006; Smit and Wandel, 2006; Eriksen et al, 2007; Tschakert, 2007). The factors that weaken communities' adaptive capacity depended on the local contexts. The most common were (in decreasing order of frequency):

- Lack of assets and human development: poverty and marginalization, lack of financial resources, lack of education, illiteracy, marginalization, low socioeconomic status
- Environmental problems: deforestation, land clearing, unsustainable agricultural and natural resource management practices
- Population growth

A proposal from India illustrates the poverty-environment-climate change-vulnerability nexus at work. Villagers in Kuttanad rely on contaminated ground and surface water resulting in many cases of water-borne diseases and subsequent loss of income from labor, as well as high

treatment costs. Increasing temperatures, according to this proposal, result in larger burdens of water and vector borne disease, adding to the socioeconomic costs associated with these health problems. Increasing temperatures also affect water supply as groundwater is depleted faster than recharge rates (Proposal #3216).

Sometimes, addressing structural inequalities such as tenure insecurity is necessary for building adaptive capacity. This was reflected most clearly in the indigenous peoples' sub-theme and less so in proposals dealing with disaster risk management. There was a view among some grant seekers and assessors that, for indigenous peoples, adaptation often needed to include land ownership issues. This is because secure legal title to land and housing, something which indigenous peoples often lack, is required for successful adaptation. Likewise, issues related to governance and collective voices were raised as integral to adaptation for indigenous communities.

In conclusion, proposals often sought to address the causes of weak adaptive capacity more than the direct climatic risk, which is taken up in the next section.

3: Adaptation Responses

As donors and governments gear up for adaptation, there is a great deal of interest in understanding the relationship between adaptation and development and in identifying the precise goals of adaptation—for example, should it address current climate variability or projected future impacts? Other questions relate to: choice of priority sectors for adaptation; target groups; scale of interventions (local or national); and timeframe, (whether near-term or long-term climate risks are addressed). Marketplace proposals yield interesting perspectives on these questions. Box 2 summarizes the winning proposals and will give the reader a perspective of the types of proposals.

The adaptation responses proposed by grant seekers are examined in this section. We look at: how the Marketplace conceptualized adaptation; the types of responses that were proposed; their focus areas and target groups; and plans for scaling up and linking to government. Proposed responses emphasized synergies between adaptation and local development and focused on offering near-term and pro-poor benefits via rural livelihoods, ecosystems and local infrastructure interventions. Surprisingly, little consideration was given to social protection, micro-finance or migration as adaptation responses. Proposals covered small rural areas, had few beneficiaries, and did little to explore how they might scale up to cover larger areas and populations. These findings have a number of implications for donors and implementers of adaptation, which are taken up in Section 5.

Box 2: Summary of winning proposals (with proposal number and title)

Sub-theme 1: Resilience of Indigenous Peoples Communities to Climate Risks

1401 Belize: Helping the Q’eqchi Maya Thrive with Sustainable Forest Management. Uncontrolled development, climate change and social marginalization are threatening the livelihoods of the Q’eqchi people of southern Belize, as well as the existence of several animal species. A DM grant will help the Sarstoon Temash Institute for Indigenous Management set up a community-based enterprise to manage forest resources so that the logging is more sustainable.

1661 Colombia: Traditional Knowledge is the Prescription for Environmental Land Management. Climate change is affecting ecosystems in the rainforest of Putumayo, Colombia, causing the disappearance of animals and fruits, as well as drought and flooding. The Organización Zonal Indígena del Putumayo has been selected for an award to develop land-use plans for 207,000 hectares of forest, using GIS and indigenous knowledge.

1041 Costa Rica: Adaptive Natural Resources Management Will Bolster Cabécar Communities. About 10 tropical storms hit the Cabécar communities in Costa Rica every year, often flooding the area. A project by a local NGO, Ixacavaa, has been selected for a DM award to rescue ancestral knowledge and combine it with new technologies to ensure that local production systems and resource management is climate-resilient.

1503 Guatemala: Empowering Guatemala’s Indigenous Communities to Cope with Climate Change. Planning for adaptation to climate change must include indigenous communities. To make this happen in Guatemala, the Asociación Sotz’il and the NGO Conservation International will use a DM award to engage indigenous groups in planning use of communal lands

and other issues. This will open the door for these groups to participate in national policymaking on adaptation.

1335 Nicaragua: Drought-Hardy “Food Forests” to Help Miskito Children Weather the Storm. Nicaragua’s Miskito communities are hit by droughts, storm, floods and hurricanes. To roll back deforestation, restore wild game and deliver better nutrition for 2,500 children, MASAGNI will use an award to cultivate Maya Nut trees. The nutrition-rich Maya Nut will generate five million pounds of food a year, improving health and local incomes.

1358 Peru: Adapting Native Andean Crops for Food Security in the Face of Climate Change. A DM grant to Peru’s Asociación ANDES will support plant-breeding to increase diversity and production of nutritious potatoes and other tubers, improving health, incomes and quality of life for the community.

1630 Peru: Indigenous Wisdom and Biomathematics: Amazonians Tackle Climate Change. Combining ancestral knowledge with the latest in bio-mathematical software to analyze GIS data, the CCNN Kechwa Copal Sacha-Urku Estudios Amazonicos Community and Urku Estudios Amazonicos will use a DM grant to help 1,500 indigenous peoples in the Peruvian Amazon better manage their production systems, protect their forest and increase their income.

1532 Russia: Climate Change Education is Best Hope for Siberian Grassroots Communities. A DM grant will help the Centre for Support of Indigenous Peoples of the North (CSIPN) train indigenous people in Siberia to develop a climate adaptation strategy and monitor progress on its implementation.

1641 Samoa: Samoans Turn to Traditional Housing as a Sanctuary from Climate Risks. Cyclones often hit Samoa, destroying many houses. The most resilient houses use traditional designs. With a DM grant, Afeafe o Vaetoefaga Pacific Academy of Cultural Restoration, Research and Development will model Samoan houses in three coastal sites, while also providing public education on climate risk.

Sub-theme 2: Climate Risk Management with Multiple Benefits

5108 Bolivia: Reducing Risks for Biodiversity Conservation Using Adaptive Fire Management. In Bolivia, as in many countries, farmers burn forests to expand farmland. To reduce the risk uncontrolled forest fires that this practice leads to, the Fundación Amigos de la Naturaleza and the Prefectura of the Department of Santa Cruz in Bolivia will coordinate burning to dates that offer favorable climate conditions.

3171 Djibouti: Solar Desalination Offers Hope Against Risk of Aquifer Pollution by Seawater. In a dry country like Djibouti, people depend on aquifers for freshwater. However, these are threatened by rising sea level and altered rainfall patterns. The Centre d’Études et de Recherches de Djibouti, and TSS Spinning and Weaving of Kenya, are receiving an award to develop solar powered desalination plants.

3959 Ethiopia: Innovative Pilot Scheme w Would Match Seeds to the Needs of Women Farmers. A DM grant will enable Bioversity International to protect the livelihoods of some 200 vulnerable women farmers, by providing access to seeds for locally-adapted varieties of crops. The project draws from gene banks, indigenous knowledge and farmer know-how, as well as traditional ways of adapting to climate variability.

4561 India: Portable Solar/Wind Greenhouse to Grow Fodder for Sustainable Dairy Farms. A DM award will help Greenfield Hydroponic Systems, Inc., convert small plots of wasteland into hydroponic greenhouses, using solar and wind-powered technologies to produce green fodder year-round. The project is expected to raise milk yields, calf birthweights and incomes.

4865 India: Women and Youth Use Reality-Show Format to Tell of Climate Options. To raise awareness about adapting to climate change, you must first get people’s attention. In Bundelkhand, India, the NGO Development Alternatives and the businesses Social Rural Direction and R. K. Swamy will use a DM grant to develop reality shows to guide people on how they can adapt to climate change and reduce associated risks.

4556 Nigeria: African Smallholders to Play Out Climate Drama on the Airwaves. Using a DM grant, the Smallholders foundation will produce 20 radio episodes in Igbo, reaching 15 million listeners and outlining how to manage climate change in their communities. Smallholder listeners clubs will use solar-powered interactive radios to provide feedback after the broadcast.

4270 Peru: Recuperation of Water Systems on Vulnerable Pre-Hispanic Andean Terraces. Climate change has made the eight-month dry season in Peru's highlands even drier. The Cusichaca Trust and the Asociación Andina Cusichaca will use a DM grant to restore proven pre-Hispanic water management and terracing practices to conserve water and increase crop yields.

3333 Philippines: Fishing Communities Seek Security in Aquaculture and Mangrove Restoration. Storms and rising sea levels are threatening the livelihood of some 20,000 poor fishing households in Northern Samar in the Philippines. With a DM grant, the Trowel Development Foundation will replant mangroves and set up a value-chain system to fatten and market tie-crabs. This will raise local incomes and build the capacity of fishing villages to adapt to climate change.

3712 Philippines: Floating Power Charger: Providing Light in the Darkness of Climate Change. Heavy flooding in remote areas of the Philippines often knocks out hydropower equipment built in rivers, resulting in blackouts. With a DM grant, Lambs Agri Mechanicals and FSSRI at the University of the Philippines at Los Baños will install floating hydropower generators, which can be removed during the increasingly occurring floods, benefiting over 2,000 people.

4307 Serbia: Daphnia Grazing to Stem Global Warming-Linked Bacterial Toxins in Fish Ponds. Climate change has increased the levels of toxic bacteria in fish farming ponds, reducing the fish meat quality and marketability. A DM grant will help SZTR Sunce develop a small-scale biological method for controlling levels of the toxin. This approach, which uses a small plankton crustacean called Daphnia, would be applicable in any region where water quality restricts fish farming.

Sub-theme 3: Climate Adaptation and Disaster Risk Management

5057 Burkina Faso: Earth-Roofed Housing: Cheap, Sustainable Shelter to Face Desertification. Timber is too scarce and costly to use for building houses in Burkina Faso. But with a DM grant, the AVN and La Voute Nubienne will undertake a pilot project to train farmers in the Boroma district to build houses with vaulted roofs of earth bricks.

4949 Dominican Republic: Wave Energy Converter to Mitigate Ocean-Wave Damage and Beach Erosion. On seacoast and island communities around Paraiso in the Dominican Republic, roads, bridges and ports built on beaches are often destroyed by storms and tidal waves. With a DM grant, the Universidad Nacional Pedro Henríquez Ureña will use an underwater mechanical apparatus to reduce the force of ocean waves and convert the wave energy into electricity.

4646 Ecuador: Elevated Bamboo Houses Designed to Lift Communities Above Flood Zones. Increased flooding in Ecuador's coastal regions often destroys homes. The International Network for Bamboo and Rattan joined the Catholic University of Santiago de Guayaquil to develop a plan to build 500 elevated, flood-resistant bamboo houses. With a DM award, they will not only bring a new and safer home to 500 families, but also link a thousand farmers and 500 builders with an existing bamboo housing supply chain.

3349 El Salvador: Healthy Wells and Latrines Keep Water Drinkable for Vulnerable Communities. PRO-VIDA and Oxfam America will install innovative healthy wells and sealed latrines which, along with awareness raising programs, will protect community health.

4311 Peru: Saving Glaciers: Artisanal Industry Aims to Stop the Melt and Save Water. A DM award will support Glaciares Peru as it engages local workers in the Peruvian highlands to produce a reflective cover that can be painted on the rocks surrounding glaciers. This will stop glacial melting and help restore glacial mass—a vital form of freshwater storage in the high Andes and the world.

3191 Philippines: Bell and Bottle: Low-Cost Warning System for Flood/Slide-Prone Communities. An innovative system using soda bottles and bells to detect imminent landslides and floods will protect over 12,000 people in remote communities.

3906 Philippines: Strengthening Disaster Preparedness of Southern Leyte with SMS Technology. Rising sea levels and shifting rainfall means more natural disasters in the southern Leyte region of the Philippines. A DM grant will help the Philippines Business for Social Progress better prepare the region's residents for disasters by raising awareness of disaster risks by using mobile phone technology to provide announcements and information-on-demand.

Source: adapted from www.developmentmarketplace.org

What is adaptation?

How was adaptation defined and conceptualized in the Marketplace experience and how does it differ from “development as usual”? Proposals emphasized synergies between adaptation and local development, were motivated by development needs and offered incremental steps to climate-proof livelihoods. Differences between adaptation and “development as usual” were ones of emphasis, with proposals focused on climate variability and climate extremes and emphasizing protection of lives and livelihoods over, say, new sources of growth. However, some proposals did not explicitly respond to climate change and a judgment call was required to determine whether they could be justified as adaptation.

Synergies between adaptation and local development emphasized

Proposals conceptualized adaptation as addressing local development challenges holistically. They did not often distinguish sharply with the challenges of overcoming poverty and underdevelopment, environmental and resource degradation, and increasing climate variability. Proposals addressed these as interconnected challenges in need of being addressed locally, and suggested incremental steps to build adaptive capacity and community resilience.

Grant seekers conveyed a sense of synergy between adaptation and local development. For example, livelihoods projects sought to raise the agricultural productivity to protect food security, while also climate-proofing it. One proposal, for example, linked rainwater harvesting with business development and income generation for women, thereby tackling both the climate and gender agendas. Harnessing indigenous knowledge for adaptation (e.g., early warning of extreme climate events or flood-prone housing construction methods) was seen as congruent with revitalization of cultural identity. Perhaps the most obvious synergy was between adaptation to extreme climate events and disaster risk management. Both call for early warning systems, preparedness and reinforcement of basic infrastructure, and are often identical for all practical purposes. At no time did we come across a real or perceived conflict between adaptation and development goals.

McGray *et al.* (2007) frame adaptation as a continuum, ranging from pure development on the one hand to explicit adaptation measures on the other. At one end of the continuum, the most vulnerability-oriented adaptation efforts overlap almost completely with traditional development practice, where activities take little or no account of specific impacts associated with climate change. At the opposite end, specialized ‘impact-driven’ activities target distinct climate change impacts and fall outside the realm of development as we know it (see also Ribot, 2010). Reviewing the substance in the proposals offers two relevant insights for this discussion. First, we did not see buy-in for an ‘impacts-driven’ approach whereby adaptation responds to the projected future impacts of climate change. Instead, proposals were vulnerability-oriented in that they aimed to broadly reduce vulnerability to a multiplicity of new and old risks and actively

sought developmental co-benefits. Proposals were ‘no regrets’, yielding benefits both in today’s climate and in a range of future climates (Heltberg, Siegel, and Jorgensen, 2009). Second, proposals focused on incremental adjustments to climate-proof current livelihoods; they did not seek to move people to new areas or livelihoods. This is a potentially important shortcoming if climate change impacts are so large as to render incremental adjustments insufficient.

Protection emphasized

Differences between adaptation and “development as usual” lay in the grant seekers’ emphasis on protecting communities. Proposals focused on protection of lives, livelihoods and indigenous knowledge against climate risks. In contrast, had the competition not focused on climate change, it is unlikely much attention would have been given to climate variability and climate extremes or that protection would have been a core objective. In all likelihood, new sources of growth would have played a larger role than protection (at least outside the field of disaster risk management). In that sense, the adaptation focus in the Marketplace led to a relatively defensive stance focused on protecting past gains.

Judgment calls required

The competition guidelines defined adaptation as “efforts to adjust to ongoing and potential effects of climate change” and emphasized building resilience to climate variability and change. Given the DM’s focus on innovation, innovative solutions were, of course, a major factor.

Some grant seekers confused adaptation and mitigation, with a number of proposals focusing on greenhouse gas emission reductions and lacking a discernible justification as an adaptation proposal. Most of these were consequently eliminated in the initial screening process. However, some proposals covered both mitigation and adaptation, for example via land use changes and tree planting, were screened as eligible and remained in the competition.

Sometimes a judgment call was required to determine if proposals could be considered adaptation. For example, some livelihood diversification projects emphasized poverty and environmental problems, but omitted a clear climate change justification. This sparked discussion among assessors and jury members on how to draw the line between adaptation and development and who should bear the burden of proof in justifying whether a development project was also addressing adaptation. Some assessors and jury members argued that grant seekers must provide explicit justification of why and how their project addresses adaptation in order to be considered. Others preferred to apply sound judgment: if the project offered an innovative way forward to diversify out of a livelihood known to be at risk from climate change, it would be considered adaptation.

Types of adaptation

Considering the types of proposed adaptation responses, we find that responses were more often soft than hard and focused on offering near-term benefits via rural livelihoods, ecosystems and infrastructure interventions.

Soft adaptation more common than hard adaptation

Most grant seekers proposed several adaptation actions. A proposal might, for example, contain changes in farm practices, value chain improvements and capacity building, usually for the same target beneficiary group. Ninety percent of semi-finalists proposed more than one adaptation action and more than two-thirds proposed more than two adaptation actions (Table 9). The average proposal put forward three adaptation actions. Why did grant seekers feel they needed to propose more than one action even in a small project? We believe that grant seekers conceptualized adaptation as merely one aspect of the gamut of local development challenges. They did not propose stand-alone solutions as they did not view climate change as a stand-alone problem.

Table 9: Number of adaptation actions pursued by grant seekers

Number of Adaptation Actions Per Proposal	Count of Proposals	Share of total (%) n=346
1	35	10.1
2	77	22.3
3	102	29.5
4	82	23.7
5	47	13.6
6	2	0.6
7	1	0.3
Total	346	100.0

Source: authors' coding of all DM semi-finalist proposals.

We coded the proposed adaptation actions into two broad categories: hard adaptation, such as local infrastructure and other physical structures, construction techniques, technologies, infrastructure, data systems, etc; and soft adaptation, such as livelihoods diversification, training, community mobilization, capacity building, awareness raising, etc. When a proposal contained more than one discrete action, we coded each separately with no attempt to control for the relative importance of each (Table 10).

Table 10: Adaptation type by stage in application process

Type of Adaptation Action Proposed	Semi-Finalists		Finalists*		Winners	
	No. of proposals	Share of total (%) n=346	No. of proposals	Share (%)	No. of proposals	Share of total (%) n=26
Soft adaptation (capacity building, livelihood diversification, social policy, etc.)	136	39.3	45	42.1	8	30.8
Hard adaptation (infrastructure, housing, etc.)	16	4.6	5	4.7	1	3.8
Mixed adaptation (hard and soft)	194	56.1	57	53.3	17	65.4
Total	346	100.0	107	100.0	26	100.0

*Finalists include actual finalists and runners-up. Source: authors' coding of all DM semi-finalist proposals.

Approximately 39 percent of all semi-finalists proposed soft adaptation actions, 5 percent proposed hard actions, and 56 percent a mix of soft and hard adaptation. Hard actions were mostly proposed in combination with one or more soft actions, such as training or capacity building. For example, a proposal from Cambodia aimed to build floating housing that could adjust to changing water levels (a hard action) combined with entrepreneurial training (soft), as well as green energy production and hydroponic fish production. Disaster early warning systems combined with training in using the systems is another example. However, proposals often contained only soft adaptation measures, such as ways to harness indigenous knowledge.

Livelihoods, ecosystems and infrastructure were often proposed

Apart from capacity building, adaptation ideas put forward most often were the following, in declining order of importance (see Table 11, Table 12 and Table 13):

- Livelihood diversification
- Ecosystem management and regeneration
- Local small-scale infrastructure
- Disaster risk management
- Providing access to various data systems
- Social protection and micro-finance

Rural livelihoods, ecosystems and local small-scale infrastructure were the most common ideas and may reflect the topics that many grant seeking organizations, especially NGOs, already work on. Livelihood diversification focused on crops, livestock, fisheries, non-food products and household energy. Ecosystem-based adaptation projects often argued that existing damages to local natural resources were harmful to livelihoods and were worsening due to climate change. In response, they sought to restore local forests, mangroves and other ecosystems. Disaster risk management proposals often advocated early warning systems and more resistant housing and infrastructure.

Social protection and micro-finance did not receive as much attention as expected. When micro-finance was proposed, it was often done so as a way to finance livelihood-related investments more than as stand-alone adaptation. Very few proposed safety nets or conflict resolution mechanisms. It not clear why, as these are policy areas with recognized adaptation potential (Heltberg, Siegel and Jorgensen, 2010).

Table 11: Types of soft adaptation in proposals

Type of Adaptation Action Proposed	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%) n=1,077	No. of proposals	Share of total (%) n=328	No. of proposals	Share of total (%) n=85
Livelihood Diversification	155	14.4	46	14.0	13	15.3
Ecosystem Restoration	134	12.4	37	11.3	12	14.1
Other	104	9.7	28	8.5	7	8.2
Disaster Risk Reduction	61	5.7	18	5.5	3	3.5
Social Protection and Micro-finance	48	4.5	17	5.2	3	3.5
Assisted Migration	3	0.3	3	0.9	0	0.0
Capacity Building, training (<i>see Table 13</i>)	325	30.2	110	33.5	28	32.9
Total No. of Soft Adaptation Actions Proposed	830	77.1	259	79.0	66	77.6

Source: authors' coding of all DM semi-finalist proposals. *Total indicates the sum of all adaptation actions, both hard and soft, contained within a given category of proposals (i.e. semi-finalist, finalist and winners' proposals)

Table 12: Types of hard adaptation in proposals

Hard Adaptation Actions Proposed	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%) n=1,077	No. of proposals	Share of total (%) n=328	No. of proposals	Share of total (%) n=85
Infrastructure development	123	11.4	29	8.8	7	8.2
Data systems	32	3.0	9	2.7	4	4.7
Housing	22	2.0	10	3.0	3	3.5
Unclear/other forms of hard adaptation	70	6.5	21	6.4	5	5.9
Total	247	22.9	69	21.0	19	22.4

Source: as above.

Table 13: Types of capacity building and technical assistance in proposals

Types of Capacity Building	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%) n=1,077	No. of proposals	Share of total (%) n=328	No. of proposals	Share of total (%) n=85
Capacity Building for Soft Adaptation						
Ecosystem Restoration	66	6.1	22	6.7	9	10.6
Livelihood Diversification	65	6.0	24	7.3	6	7.1
Disaster Risk Reduction	51	4.7	14	4.3	4	4.7
Social Protection and micro-finance	8	0.7	3	0.9	0	0
Assisted Migration	1	0.1	0	0	0	0
Total Number of Proposed Capacity Building Interventions for Soft Adaptation	191	17.7	63	19.2	19	22.4
Capacity Building for Hard Adaptation						
Housing	13	1.2	6	1.8	2	2.4
Infrastructure Development	9	0.8	3	0.9	1	1.2
Data Systems	7	0.6	1	0.3	0	0
Total Number of Proposed Capacity Building Interventions for Hard Adaptation	29	2.7	10	3.0	3	3.5
Unclear						

Unclear/Other Forms of Soft Adaptation	78	7.2	27	8.2	4	4.7
Unclear/Other Forms of Hard Adaptation	20	1.9	8	2.4	2	2.4
Unspecified form of capacity building	7	0.6	2	0.6	0	0
Total Number of Proposed Capacity Building Interventions that are unclear	105	9.7	37	11.3	6	7.1
Total of Proposed Capacity Building Interventions (Hard, Soft, and Unclear)	325	30.2	110	33.5	28	32.9

Source: as above.

Migration was something to be deterred

Migration also played a surprisingly small role in the proposals, other than as something to be deterred via local interventions. Marketplace participants did not attempt to assist or leverage migration as an adaptation response. This is in contrast to the literature’s recognition of spontaneous migration as a common response to vulnerability associated with climate change (World Bank, 2009, pp. 108-111; Raleigh and Jordan, 2010). The bulk of proposals aimed to diversify rural livelihoods as a means of deterring migration in the face of climate change. Other proposals sought to protect against increasing risk of natural disasters, again with a view to defend areas at risk and deter migration.

Only four semi-finalists discussed assisted migration. Three would use funds for activities complementary to ongoing migration, that is, without directly sponsoring relocation. One of the three sought to offer basic services to “climate refugees” in coastal Bangladesh (proposal #3635). Another proposed building disaster-resistant homes and offering relocation assistance for people to move into them (proposal #1483). A third grant seeker aimed to build consensus between community members and state actors on resettlement strategies (proposal #3996). The fourth sought Marketplace funds to, among other things, relocate outside settlers from a biodiversity area owned and sparsely inhabited by an indigenous peoples group (proposal #1483). The focus in the last one was on forest and biodiversity protection, not on migration as an adaptation response to be developed and supported.

Livelihood diversification and natural disaster management are good strategies only insofar as populations remain in exposed locations. Some low-lying island nations have already realized that certain areas are practically impossible to defend against climate change and are drawing up contingency plans for relocation. But what are the most appropriate responses in heavily exposed and relatively marginal areas (e.g., some arid lands and mountains) where migration is already important and might be the dominant response to climate change? Should adaptation focus on building resilience of local rural production or on preparing for migration? Although important, such strategic discussions can hardly be expected in the context of small community-based projects with a near-term focus, which is why proposals rarely featured these issues.

Only near-term actions proposed

The literature often distinguishes between two forms of adaptation. One focuses on adapting to present impacts, while the other focuses on responding to projected future impacts via long-term planning. A compromise between the two stresses the importance of ensuring that short-term responses are compatible with long-term strategies and avoid causing maladaptation.

Marketplace proposals invariably contained near-term actions that would deliver benefits within the two-year implementation period. They would help communities respond to existing climate and development challenges in the short term, often with an implicit understanding that this would constitute a first step toward long-term adaptation. Occasionally, there were aspirations to continue and scale up efforts in order to deliver more long-term benefits and apply approaches in wider geographic areas.

The literature also distinguishes between proactive and reactive adaptation (Smit and Skinner, 2002). Proactive (or ex-ante) adaptation takes place before events (e.g., early warning systems), and reactive (or ex-post) after events (e.g., humanitarian assistance to people affected by disasters). This distinction is not that clear-cut in practice. As mentioned earlier, Marketplace proposals were formulated in response to current climate variability with already observed adverse impacts. Still, they cannot be described as reactive. They focused on adjusting livelihoods, knowledge systems and infrastructure to reduce the impacts of regularly occurring events. The dynamic is better described as event-response-event, which has been described as “co-evolution” of problems and responses in a dynamic setting by Shalizi and Lecocq (2009).

Focus of projects

Where are projects focused and who are they targeting? Typical Marketplace proposals focused on small rural areas. Proposals were pro-poor, targeting women, inhabitants of remote areas and indigenous peoples, and often sought to cover a small number of beneficiaries (in the low thousands).

Rural geographic focus

Rural areas were dominant in proposals, even though competition guidelines were neutral between urban and rural areas (Table 14). Nearly 66 percent of semi-finalists covered rural areas exclusively, 8 percent covered urban areas and 5 percent covered both. The rest were unclear. A majority of those that did cover urban areas were in the disaster risk-reduction sub-theme. In other words, urban proposals were few and mostly focused on natural disaster risks, while rural proposals were more numerous and addressed a wide range of risks.

Table 14: Geographic scope: urban vs. rural

Geographic Scope	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%) n=346	No. of proposals	Share of total (%) n=107	No. of proposals	Share of total (%) n=26
Rural	227	65.6	78	72.9	20	76.9
Urban	26	7.5	5	4.7	1	3.8
Both Urban and Rural	16	4.6	3	2.8	0	0.0

Unclear	77	22.3	21	19.6	5	19.2
Total	346	100.0	107	100.0	26	100.0

Source: authors' coding of all DM semi-finalist proposals.

The rural focus may have emerged for pragmatic reasons, as many civil society and indigenous peoples' organizations work in rural development and are continuously looking for funding opportunities. Such organizations are likely to notice and apply to the Development Marketplace. In fact, many have participated in past DM competitions, which have often had a rural orientation, including the DM2008 on Agriculture for Sustainable Development.

Coastal areas, mountains and forests were the types of areas most commonly targeted by rural proposals (Table 15). Proposals in coastal areas focused on mangroves, saltwater intrusion and protection from storm risks. Proposals in mountainous areas focused on natural disasters, triggered by flooding and extreme temperatures, vulnerable livelihoods and indigenous knowledge (e.g., in the Andes). Proposals in forest areas focused on indigenous knowledge and livelihood development for indigenous communities. Although drought was often mentioned as a climate risk, drylands did not receive much focus.

Table 15: Geographic scope of rural proposals

Geographic scope of rural proposals	Semi-Finalists	
	No. of proposals	Share of total (%) n=346
Coastal	45	13.0
Mountain	44	12.7
Forest	32	9.2
Arid drylands	21	6.0
Highlands	6	1.7
Grasslands	4	1.2
Other, not clear or not mentioned	75	21.7
Total	227	65.6

Source: authors' coding of all DM semi-finalist proposals.

Pro-poor projects

How well did participants live up to the emphasis of the competition on targeting adaptation to the poor and vulnerable? Most proposals focused on inhabitants of poor rural areas, often quite remote ones, implicitly adopting geographic targeting. Many proposed mobilization and empowerment of the poor. Indigenous peoples (IP) were a prominent beneficiary group: not only did the IP sub-theme exclusively target adaptation by and for IP, a substantial number of grant seekers (around 27 semi-finalists) in other sub-themes also targeted IP beneficiaries. In addition, 42 percent of semi-finalists considered gender dimensions, for example by targeting female

beneficiaries. Therefore, on the basis of available information, it is fair to conclude that projects were well-targeted to the poor.

Regression analysis presented in Annex 5 suggests that proposals in the IP sub-theme had an above-average probability of advancing to the finalist and winning stages, keeping other factors constant. However, explicitly targeting women did not significantly influence the probability of a project advancing.

Table 16: Grant seekers that consider gender dimensions of adaptation

	No. of grant seekers that explicitly consider gender dimension of adaptation	
	No. of proposals	Share of total (%) n=346; n=107; n=26
Semi-finalists	145	41.9
Finalists	40	37.4
Winners	10	38.5

Source: authors' coding of all DM semi-finalist proposals.

Most proposals were at local scales and had relatively few beneficiaries

Most proposals sought to cover a relatively small area, often a few villages or parts of a district, and counted their intended beneficiaries in the lower thousands. Very few proposals set out to promote adaptation at national or international levels, although some did seek to influence national or local policies as a secondary objective. Half of the semi-finalists aimed to cover a district (fully or partly), while 28 percent sought to cover a small area, typically a few villages, (Table 17). As a result, most projects had fewer than 5,000 intended beneficiaries (self-estimated by participants), with many even below 1,000 (Table 18). The cost per intended beneficiary usually ranged from \$20 to \$200.

One fairly typical project, for example, sought to mobilize villagers to make a variety of livelihood improvements in a handful of isolated Nepalese villages. Another project, covering the major parts of one Indian district, proposed using community radio to communicate adaptation messages in the local language. Yet another project aimed to create mobile clinics for diagnosing crop pests (an increasing problem due to climate change) covering market towns all over Kenya. However, this project is somewhat atypical in its national scale.

Table 17: Geographic scope of proposed projects

Geographic Scope	No. of proposals	Share of total (%) n=346
District or province, similar	175	50.6
Very localized (below district, a few villages)	97	28.0
Regional within country	31	9.0
National Scope	16	4.6
International, cross border	11	3.2
Regional	2	0.6

Not clear/other	14	4.0
Grand Total	346	100.0

Source: authors' coding of all DM semi-finalist proposals.

Table 18: Intended number of beneficiaries

Intended No. of Beneficiaries	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%)	No. of proposals	Share of total (%)	No. of proposals	Share of total (%)
1,000 or less	136	39.3	51	47.7	10	38.5
Between 1,000 - 5,000	89	25.7	24	22.4	7	26.9
Between 5,000-10,000	19	5.5	8	7.5	4	15.4
Between 10,000 to 50,000	30	8.7	9	8.4	1	3.8
More than 50,000	28	8.1	8	7.5	2	7.7
Not clear	44	12.7	7	6.5	2	7.7

Source: authors' coding of all DM semi-finalist proposals.

Scaling up

All proposals were required to generate results in two years with a budget ceiling of \$200,000. As projects were therefore mostly small and local, it was often unclear how they might scale up to cover larger areas and populations and continue beyond the two-year funding period. Did they take steps to lay the groundwork for scaling up later to cover larger areas and wider populations or extend beyond two years? A look at the revenue plans of projects, as well as links to international and government partners, suggests opportunities were missed for laying the groundwork for scaling up.

Few plans for generating revenues

There were few self-propelling business models for reaching a wider geographic scale or achieving a longer duration of project activities. Grant seekers relied on donor funding and seldom had a business model that would allow them to generate revenue to grow their operations. While some projects did set out to generate revenue, for example by marketing a new product, that revenue would usually go fully or partly to project beneficiaries and not to the implementing organizations. Rarely would projects generate the funds necessary to scale up, or even continue beyond the two-year period financed by the Marketplace (Table 19). The sections in the proposals that described scaling up potential tended to be weak. Moreover, Marketplace guidelines focused on covering the poorest, not the easiest market segment to cover for businesses. However, if donors make concessional financing available for adaptation purposes, projects need not generate revenue in order to be sustainable (see Ayers and Huq, 2009 for a recent overview of development assistance for adaptation).

Missed opportunities for partnerships to promote scaling up

Many grant seekers missed opportunities for international partnerships, which could potentially have helped them scale up via links to knowledge and funding networks. Most partnerships were

between organizations from the same country. Sixty percent of semi-finalists applied in partnership with another organization. Of these, the majority (174 cases) proposed South-South partnerships. Only 11 were international, while 163 were same country partners. 41 cases were North-South and 12 cases were South-North partnerships (Table 20).

There were also few attempts to use partnerships with governments or larger organizations in order to foster sustainability and scaling up. NGOs and civil society organizations (CSOs) were the most common type of partner just as they were the most common type of applicant (Table 21). Eight percent partnered with government and only one percent of primary grant seekers were government agencies. Primary applicants from academic institutions were the most likely to have a government partner, while indigenous applicants were the least likely. Government partnerships were divided equally between national and local government (Table 22). But even projects with a national government partner focused on the local scale as none of the 12 grant seekers that partnered with national government had ambitions for national-scale coverage.

Governments can both promote and impede success. One semi-finalist expected her government to provide land for project activities, while also describing how the very same government battles indigenous groups over contested land. Many grant seekers referenced government even if they were not listed as partners. Of 346 semi-finalists, 160 referenced some role for government (Table 23). For example, many looked to government as a potential source of funds for project sustainability (72 instances). But these references were somewhat speculative about this funding and lacked plans for attaining the funds. Some proposals sought to build government capacity or achieve goals, which the government does not have capacity to achieve (45 instances). One winner, for instance, sought to protect drinking water from cyanobacteria and to build government capacity to address it using a technology to be piloted by her project. A Kenyan grant seeker described how certain water policies promote maladaptation and sought to engage ministries in policy reform. But this example is unusual in that the role of national policies in promoting adaptation or maladaptation did not receive much attention.

Table 19: Revenue generation plans of projects

Does the project generate revenue?	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%) n=346	No. of proposals	Share of total (%) n=107	No. of proposals	Share of total (%) n=26
Revenue generated for grant seekers	40	11.6	8	7.5	2	7.7
Revenue generated for project beneficiaries	69	19.9	16	15.0	6	23.1
Revenue generated for both grant seekers and project beneficiaries	82	23.7	27	25.2	7	26.9
Reliant on donor and/or government funding	112	32.4	40	37.4	9	34.6
Not clear/other	43	12.4	16	15.0	2	7.7

Source: authors' coding of all DM semi-finalist proposals.

Table 20: International partnerships

Type of Partnership	Semi-Finalists	Finalists	Winners
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	No. of grant seekers	Share of total (%); n=346	No. of grant seekers	Share of total (%); n=107	No. of grant seekers	Share of total (%); n=26
South-South Partnerships	174	50.3	53	49.5	14	53.8
North-South Partnership	41	11.8	12	11.2	4	15.4
South-North Partnership	12	3.5	5	4.7	2	7.7
All partnerships	227	65.6	70	65.4	20	76.9
No partnership*	119	34.4	37	34.6	6	23.1
Total	346	100.0	107	100.0	26	100.0

Source: Authors' analysis based on DM data base. Note: The apparent discrepancy between this table and Table 21 is due to the fact that multiple grant seekers not required to engage in a partnership did so anyway. In the case of semi-finalists, this applies for 18 out of the 137; finalists 3 of the 41 and for winners 2 of the 8.

Table 21: Type of partner organization sought by semi-finalists

Partner Organization Type	Semi-Finalists		Finalists		Winners	
	No. of grant seekers	Share of total (%); n=346	No. of grant seekers	Share of total (%); n=107	No. of grant seekers	Share of total (%); n=26
Non-Governmental Organization (NGO) or other civil society organization	122	35.3	39	36.4	9	34.6
Academia or Research Organization	29	8.4	7	6.5	4	15.4
Government	26	7.5	9	8.4	2	7.7
Private Business	22	6.4	8	7.5	3	11.5
Development Agency (bilateral or multilateral) or Foundation	10	2.9	3	2.8	0	0.0
No Partnership Required*	137	39.6	41	38.3	8	30.8
Total	346	100.0	107	100.0	26	100.0

Source: Authors' analysis based on DM data base.

Table 22: Grant seekers interested in partnering with government (semi-finalist stage)

Grant seekers interested in collaborating with government	No. of grant seekers	Share of total (%); n=346
Academic Institutions	10	2.9
Development Agencies	4	1.2
NGO or CSO	8	2.3
Private Business	2	0.6
Registered IP Organization	1	0.3
Total	25	7.5
Level of government with which grant seekers partner	No. of grant seekers	Share of total (%); n=346
National	12	3.5
Local (State, District/Municipal/Provincial)	13	3.8
Total	25	7.5

Source: Authors' analysis based on DM data base.

Table 23: Role of government as referenced in grant proposals (semi-finalist stage)

Role of Government	No. of proposals	Share of total (%); n=209
Sustainability, replication and/or group	72	34.4

Capacity building of government, meeting government's unmet strategic objectives	45	21.5
Input, facilitate access	37	17.7
Assist in policy or strategic thinking	22	10.5
Advocacy	19	9.1
Impediment, obstacle	4	1.9
Vague, unclear, other	10	4.8
Total	209	100.0

Source: Authors' analysis based on semi-finalist proposals.

4: Innovation and Assessment

As the stated objective of the Development Marketplace is to identify and fund social innovations in the early stages, this section examines how innovation was defined and assessed and what types and stages were proposed. We found that the Marketplace’s definition of globally new concepts proved hard to maintain in practice and that early-stage process innovations dominated.

Defining and assessing innovation

Innovation was the central objective, but how was it defined and assessed in the Marketplace? Three challenges with assessing innovation emerged: determining whether an idea was globally new or not; distinguishing between innovation and quality could become blurred at times; and determining what innovation meant in particular contexts, such as that of indigenous peoples, could be challenging.

Innovation was central

The Marketplace was conceived as a forum for global innovation in development, rather than as a source of funding for conventional projects, however meritorious they might be. Competition guidelines stressed innovation as a major criterion: all selected proposals had to be innovative and go beyond traditional development projects. The guidelines also made clear that the Marketplace was looking for globally new processes, products or technologies, not merely transfers of concepts from one locality to another.

The assessment process was set up to enforce the emphasis on innovation. After screening out proposals that failed to comply with basic competition rules, the assessment took place in three phases which all emphasized innovation (also see Annex 2):

- Assessment round 1: Assessing proposals solely on the grounds of innovation or “new methods that go beyond existing development projects”.
- Assessment round 2: Assessing proposals based on innovation, capacity to provide measurable results, organizational capacity, sustainability of impact and growth potential.
- Final jury selection: Stringent selection based on quality of proposals at the DM event at World Bank headquarters, and 15 minute interviews with competition finalists discussing innovation, sustainability, replicability and other quality issues.

Internal discussion took place regarding the global definition of innovation. Some assessors argued that geographic transfers of useful innovations are worthwhile and should be funded.

They felt that the global experience with community-based adaptation is so limited that transfer of promising ideas from one location to another is a sufficiently strong goal. Others felt that quality is more important than innovation, as discussed below.

Assessing innovation proved difficult

As mentioned, grant seekers proposed a wide range of ideas and approaches. Sometimes, it proved nearly impossible to determine whether they had been used elsewhere in the world. This was true for product and livelihoods innovations (i.e., new ways to grow a specific crop) as well as for process and partnership innovations (i.e., new ways to promote awareness and build capacity). For example, many livelihoods projects argued that they would deploy known community mobilization and capacity building approaches in a new innovative manner. Even for well-qualified professionals, assessing this type of innovation is bound to be somewhat arbitrary and easily conflated with quality assessment.

Quality, however, is distinct from innovation. Realism, feasibility, implementation capacity and strength of the write-up were among the quality aspects that the Marketplace paid attention to. Many proposals, especially in the early stages, did not contain a strong logic chain from problem statement to proposed activities and desired outcomes. Others suffered from weak language, which made it difficult to understand exactly the problem addressed and solution proposed.

Indigenous participants often proposed using ancient practices and knowledge for adaptation purposes. For example, some proposed to revert to traditional architectural designs that build houses on stilts in flood-prone areas. Such houses can be more resilient to flooding than contemporary ones. There was much interest in using indigenous knowledge in new ways, such as relying on ancient knowledge of how certain biological markers can be used to forecast extreme weather phenomena and take action to prepare for such events (for example, delayed planting). Collaboration between traditional and scientific knowledge was sought by some indigenous groups. Because of the historic suppression and discrimination of indigenous peoples' languages and traditions, promoting indigenous knowledge can be seen as innovative in itself. This was provided as feedback from some assessors. In this regard, the innovation was to attach value to indigenous knowledge and seek to use it, not *how* the indigenous knowledge was being used.

Types and stages of innovation

While requiring innovation, the competition allowed for a wide range of innovation types and stages, as described in Box 3. Most proposals focused on new ideas in their early stages and on process innovations.

Early-stage innovations

Grant seekers had to self-select the stage of their proposed innovation using three categories:

- New untested idea: in the case of a new technology, no prototype exists.

- Early testing stage: the idea has evolved beyond an untested concept or blueprint. For example, a prototype has been developed, but not field-tested on a sufficient scale to indicate feasibility of the idea.
- Proof of concept stage: the idea has been validated in the field, demonstrating its feasibility, but more small-scale testing is required under a variety of conditions to test robustness.

Many of the DM proposals were in the early stages of the innovation process. Among semi-finalists, 24% proposed a new untested idea and 39% proposed an idea in the early testing stage. This constituted a high share of early unproven concepts. Among the winning proposals, new untested ideas were only 12%, while half were in the early testing stage (Table 24).

Table 24: Stage of proposed innovations by assessment period

Stage of proposed innovation	Semi-Finalists		Finalists		Winners	
	No. of grant seekers	Share of total (%) n=346	No. of grant seekers	Share of total (%) n=107	No. of Grant seekers	Share of total (%) n=26
New untested idea	83	24.0	26	24.3	3	11.5
Early testing stage	134	38.7	40	37.4	13	50.0
Proof of concept stage	129	37.3	41	38.3	10	38.5
Grand Total	346	100.0	107	100.0	26	100.0

Source: DM data base. Innovation type was self-selected by grant seekers as part of the submission process.

Process innovations dominated

The Marketplace accepted three broad types of innovations:

- New processes, including new mechanisms to deliver products and services (68% of semi-finalists)
- New products (21% of semi-finalists)
- New technologies (11% of semi-finalists)

Put simply, new products and technologies promise relatively tangible outputs and often involve engineering and hardware (i.e., disaster-resistant housing and water or energy supply technologies). New processes, in contrast, offer more intangible outputs and often involve new ways of carrying out capacity building, knowledge exchange or communication. Process innovations dominated in all three sub-themes, constituting 68% of the total and a full 78% of indigenous peoples' proposals. Technological innovations constituted 11% of semi-finalists but 23% of the winners. The competition aimed to remain neutral between types of innovation, so why did some assessors rate technological innovations so high? A speculative answer might be

that sometimes technologies can seem less ‘fuzzy’ and are appealing solutions to tough problems.

Table 25: Type of innovations proposed by assessment period

Innovation Type	Semi-Finalists		Finalists		Winners	
	No. of proposals	Share of total (%) n=346	No. of proposals	Share of total (%) n=107	No. of proposals	Share of total (%) n=26
New process, including new mechanism to deliver an existing product or service	236	68.2	66	61.7	18	69.2
New product or service	72	20.8	24	22.4	2	7.7
New technology	38	11.0	17	15.9	6	23.1
Grand Total	346	100.0	107	100.0	26	100.0

Source: DM data base. Innovation type was self-selected by grant seekers as part of the submission process.

The fact that most projects are early-stage innovations has implications for scaling up. As a rule of thumb, early ideas need more support for a longer duration to reach maturity. However, the Marketplace has little capacity to support small organizations beyond initial funding—it was conceived as a grant competition not as an incubator that grows small CSOs. To reach scale, many grant seekers would likely need significantly more support than the \$200,000 grants, including support in writing business models, accessing larger funding pools and systematic capacity creation (Gillespie, 2004). The duration of incubation support would need to extend beyond the two-year grant execution period. However, while the incubator function could potentially be valuable, there is no simple way for the Development Marketplace to transform itself into an incubator.

Box 3: How the competition guidelines defined innovation

Innovation is a major criterion for the Development Marketplace. All proposals selected for funding must be innovative beyond traditional development projects. For illustrative purposes, examples of possible types of innovation can be seen below.

New technologies

- New technologies and communication tools to translate weather and climate information for local use
- New technology, standards and practices that are resilient to climate change and climate-related disasters, including for low-cost housing and local infrastructure

New products or services using existing technology

- Rapid participatory testing of new varieties of crops and practices for new climates
- New community-based approaches to deliver safety nets and micro-insurance for managing climate risk
- A portable package to help integrate a climate risk mapping system that combines multiple sources of information (scientific, participatory, customary knowledge) and tools (satellite maps, participatory 3-D mapping, sketch mapping, clay models)
- New means to equip urban planners with knowledge and tools to adopt standards of climate-resilient housing and local infrastructure
- New agricultural products and practices that conserve water and are resilient to low and unpredictable rainfall

New processes, including new mechanisms to deliver products or services

- New processes that enable rapid exchange of adaptation knowledge among indigenous groups
- New types of incentives to spur adoption of practices that better manage the risks from new climates
- New approaches, including those that draw from multiple sources of knowledge (scientists, practitioners) to identify and target communities and households vulnerable to climate risks
- New types of partnerships to share and act upon land, water and soil management knowledge
- New types of partnerships to help farmers access markets, products and services for climate-risk management (for example, setting up farmers’ groups that promote resilient and water conserving crops or market those crops)

- Novel micro-finance schemes geared toward managing climate risks or improving the value chain.

Source: DM2009 Competition Guidelines (www.developmentmarketplace.org)

5: Implications for Adaptation Support

The previous sections examined lessons from a large number of the adaptation proposals received in the Development Marketplace. Those sections reviewed risks identified by projects, proposed responses and types of innovations involved. This section focuses on what implications can be drawn from these lessons. It addresses relevant implications for the World Bank, other development agencies, governments and organizations that aim to promote adaptation via programs and projects under, for example, the Adaptation Fund and the Pilot Program for Climate Resilience.

Broadly speaking, community-based adaptation should be designed to emphasize its strengths in local grounding and synergies with development, help connect local initiatives to knowledge and funding at higher levels, and use complementary approaches to address policy issues. We examine each of these sets of implications in turn.

Some of the implications are predicated on the assumption that Marketplace proposals are representative of community-based adaptation writ large. Restrictions imposed by the Marketplace on proposals were few, and the eligibility criteria were open to almost all types of participants either alone or in partnership. The ceilings on budgets and implementation period did not differ much from what other potential funders would impose. The innovation criterion distinguishes the Marketplace from many other funding sources, but although it was systematically emphasized, it was not interpreted in an overly restrictive manner. The dedicated sub-theme for indigenous groups was an unusual characteristic of the Marketplace resulting in high participation by indigenous peoples.

Supporting adaptation in a way that plays to the strengths of community-based approaches

Grounding in local socioeconomic and climatic realities and close synergies between adaptation and development were core strengths of Marketplace proposals, which funding regimes for adaptation should seek to promote.

Small community-based projects are a viable means to support adaptation. The Marketplace demonstrated the imminent possibility of eliciting many projects in most regions of the world, and donors will have no problem finding suppliers. Many CSOs are ready to supply such projects, particularly in rural areas. In fact, civil society all over the world is concerned about climate change and is eager to take steps to soften its impacts by integrating adaptation into development work. However, the Middle East, North Africa and Central Asia and, to a lesser extent, urban areas may not be adequately covered unless capacity is built among potential providers.

Support for adaptation should include projects that address both climate and non-climate/development challenges, and avoid delinking adaptation from development. Adaptation

funding regimes should allow projects to focus on managing current climate variability and extreme events. Sharp distinctions between adaptation and development should be avoided by blending adaptation and development funding. Projects should include attention to building adaptive capacity by addressing non-climatic socioeconomic conditions. Without the above, projects will lose the quality of local grounding.

Project design requires understanding community adaptive capacity and identifying effective ways to bolster it. The focus on vulnerability reduction calls for solid grounding of projects in local realities, involvement of communities to determine and address local causes of vulnerability, and exploring synergies with development. In this way, projects can leverage the strength of community-based approaches.

Addressing long-standing inequalities and issues such as tenure security may be important for adaptation, but will not always succeed because of the difficulties in resolving these issues. Development agencies therefore need realism when deciding upon concrete measures that can be taken to improve community resilience. They also need to recognize the inherent limitations in community-based approaches, including: lack of attention given to the role of migration and social protection responses; and the difficulty of addressing climate change threshold effects that might render areas and livelihoods unviable.

Synergies with development can often be exploited by incorporating adaptation elements into other activities. Many ongoing projects in sectors such as water, rural development, livelihoods, natural resource management and environmental protection will often be able to add elements designed to foster adaptive capacity. Building on ongoing projects has the added advantage of avoiding further fragmentation of sectors.

The fact that many projects look much like ‘traditional’ development projects should not be considered a drawback, as long as climate vulnerability is addressed. Many disaster risk reduction projects, for example, would look nearly identical in the absence of climate change. Much the same applies to other sectors, such as water and rural development.

Adaptation sponsors should not expect close anchoring in formal climate science, particularly downscaled long-term projections. From the perspective of many Marketplace proposals, the current emphasis in much of the adaptation community on elaborate modeling of downscaled climate impacts seems misplaced. The issue is not so much whether projects address a scientifically ‘correct’ climate risk, but whether there is a heightened vulnerability due to climate change and whether projects adequately address this.

Affected communities often have a strong sense of the most pressing climate risks affecting their security and livelihoods. Climate vulnerability can be identified via a community risk assessment as proposed by Van Aalst, Cannon and Burton (2008). Methods can be developed to check how well community perceptions correlate with formal climate science predictions. Moreover,

community-based adaptation is flexible and can accommodate formal scientific knowledge to a greater extent once that knowledge is reliably available at sufficiently local and near-term levels.

Project quality must remain a top priority even as the world moves to rapidly gear up adaptation. Established quality standards are applicable when assessing adaptation projects and donors may want to define carefully what aspects of project quality and innovation they are aiming to support. Given the limited experience with adaptation, a case can be made that building a solid body of experience with adaptation projects in a range of sectors and countries is more important than striving for innovation in each and every project.

Project sponsors should invest in monitoring and evaluation of adaptation projects to assess the factors that influence project outcomes. Good monitoring and evaluation will play a critical role in learning more about what does and does not work in adaptation and will complement the proposal-based analysis in this paper.

Connecting local initiatives to knowledge and funding at higher levels

Concerns over how well community-based adaptation approaches can be scaled up to reach wider coverage are legitimate but need to be tempered by recognizing the drawbacks of alternative top-down approaches, namely ignoring variations in local needs, realities and knowledge. Community-based adaptation could be bolstered by mechanisms that connect it to knowledge and funding at national or international levels.

Local organizations involved in adaptation may not be able to scale up, nor will they necessarily connect to national or international centers of expertise unless assisted in doing so. The Marketplace saw little use of international partnerships to enhance project effectiveness. Knowledge networks will therefore be important. Such networks need to connect providers of community-based adaptation, especially small community-based organizations, with global knowledge and good practices. Such global networks are already forming. For example, the International Institute for Environment and Development (IIED) has organized four international conferences on community-based adaptation. The 2008 conference established the Global Initiative on Community-Based Adaptation to Climate Change, which seeks to support activities related to community-based adaptation by generating and sharing relevant knowledge.

Mechanisms for linking local and formal scientific knowledge are also required. Local and indigenous knowledge of climate patterns and how they interplay with livelihoods and disaster risk underpinned project design in many of the proposals. Few proposals cited formal climate science. However, in the context of small individual projects with a two-year horizon, the absence of formal climate science was not a problem.

Over the longer run, however, and when attempting to reach scale, it will become increasingly important that near-term actions address key long-term risks projected by formal climate science. This is not to say that planning of community-based adaptation ought to be driven primarily by climate science, but that mechanisms should be found to ensure that the totality of adaptation efforts offers adequate protection against major projected impacts of climate change. Likewise,

opportunities for using more immediate climate information that can put community experience into perspective and possibly help manage rising uncertainty through better use of short-term predictions and forecasts might be beneficial.

Funding networks should help replication and scaling up. Community-based organizations may need support to reach scale without losing their local grounding quality. To address the small scale and short duration of projects, donors and governments may consider mechanisms for aggregating and scaling up localized approaches. Community-driven development platforms seem well-suited to offer such mechanisms.

Community-driven development is an approach that takes local participatory development to scale and could be considered. It leverages local knowledge by involving communities in the planning and execution of small, local development projects while relying on a central agency to address the challenge of funding and supervising technical and fiduciary aspects. Many community-driven projects already work on rural livelihoods, natural resource management, and natural disaster preparedness and recovery, and are therefore well-placed to scale up community-based adaptation. The lesson of the Marketplace is that community-based adaptation projects and proponents use approaches and face challenges that would integrate well with the existing community-driven development umbrella.

Using complementary approaches to address policy

Project-based interventions cannot stand alone as a country's only approach to promoting adaptation. Many policies, programs and public goods of importance to adaptation are best promoted at the national or international levels. For instance, social protection and micro-finance for adaptation are often best promoted at the national level, and can often be adjusted to incorporate climate objectives—for example, expansion of cash transfers into areas affected by adverse weather events or micro-insurance against drought.

Policies that foster maladaptation must also be identified and addressed, such as water subsidies or trade policies that promote water-intensive crops in arid climates. Tenure insecurity undermines incentives to make adaptive investments in land, while lack of education hinders adaptation. National policy reform is often the best way to address policies that foster maladaptation.

Adaptation also relies on public goods that can best be provided at the national or international level. This includes breeding of crop and livestock and forecasting of weather and climate. Some Marketplace projects promoted these kinds of public goods and often adopted a national focus.

References

- Adger, W. Neil, Suraje Dessai, Marisa Goulden, Mike Hulme, Irene Lorenzoni, Donald R. Nelson, Lars Otto Naess, Johanna Wolf and Anita Wreford, 2009. Are there social limits to adaptation to climate change? *Climatic Change* (93), pp. 335–354.
- Adger, W. Neil, 2006. Vulnerability. *Global Environmental Change*, (16), 268-281.
- Agrawal, Arun, and Nicolas Perrin, 2008. Climate Adaptation, Local Institutions and Rural Livelihoods, *University of Michigan International Forestry Resources and Institutions Program Working Paper # W08I-6*.
- Ayers, Jessica M., and Saleemul Huq, 2009. Supporting Adaptation to Climate Change: What Role for Official Development Assistance? *Development Policy Review*, 27(6), pp. 675-692.
- Eriksen, Siri, Richard J.T. Klein, Kirsten Ulrud, Lars Otto Naess and Karen O'Brien, 2007. Climate change adaptation and poverty reduction: key interactions and critical measures. *GECHS Report* (1). Department of Sociology and Human Geography, University of Oslo. Oslo, Norway.
- Gillespie, Stuart, 2004. Scaling up community-driven development: a synthesis of experience, *FCND Discussion Paper 181*. Washington, DC: International Food Policy Research Institute..
- Heltberg, Rasmus, Paul. B. Siegel and Steen L. Jorgensen, 2009. Addressing Human Vulnerability to Climate Change: Toward a 'No Regrets' Approach. *Global Environmental Change* (19), pp. 89-99.
- Heltberg, Rasmus, Paul B. Siegel and Steen L. Jorgensen, 2010. Social Policies for Adaptation to Climate Change. In: Robin Mearns and Andrew Norton, eds. *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*. New Frontiers of Social Policy. Washington, DC: The World Bank.
- International Institute for Sustainable Development, 2010. *Community-Based Adaptation to Climate Change Bulletin: A Summary of the Fourth International Conference on Community-Based Adaptation to Climate Change*. Published by IISD in collaboration with IIED, 135 (3), 2 March 2010. Available at: <http://www.iisd.ca/ymb/climate/cba4/>
- Heather McGray, Rob Bradley, Anne Hammill, with E. Lisa Schipper and Jo-Ellen Parry, 2007. *Weathering the Storm: Options for Framing Adaptation and Development*. World Resources Institute. Available at: <http://www.wri.org/publication/weathering-the-storm>.
- Parry, Martin, Osvaldo Canziani, Jean Palutikof, Paul van der Linden, and Clair Hanson (eds), 2007. *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- Raleigh, Clionadh, and Lisa Jordan, 2010. Climate change and migration: emerging patterns in the developing world. In: Robin Mearns and Andrew Norton, eds. *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World.*, New Frontiers of Social Policy, Washington, DC: The World Bank..
- Reid, P., and Coleen Vogel, 2006. Living and responding to multiple stressors in South Africa—glimpses from KwaZulu-Natal. *Global Environmental Change*, (16), pp. 195–206.

- Ribot, Jesse C., 2010. Vulnerability does not just come from the sky: framing grounded pro-poor cross-scale climate policy. In: Robin Mearns and Andrew Norton, eds. *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*. New Frontiers of Social Policy, Washington, DC: The World Bank.
- Schipper, Lisa F., 2007. Climate Change Adaptation and Development: Exploring the Linkages. *Tyndall Centre for Climate Change Research Working Paper 107*.
- Shalizi, Zmarak, and Franck Lecocq, 2009. To Mitigate or to Adapt: Is that the Question? Observations on an Appropriate Response to the Climate Change Challenge to Development Strategies. *The World Bank Research Observer*. doi;10.1093/wbro/lkp012.
- Smit, Barry, and Johanna Wandel, 2006. Adaptation, adaptive capacity and vulnerability. *Global Environmental Change*, (16), pp. 282-292.
- Smit, Barry, and Mark W. Skinner, 2002. Adaptation options in agriculture to climate change: a typology, *Mitigation and Adaptation Strategies for Global Change*, 7 (1), pp. 1381-2386.
- Sperling, Frank, with Corinne Validivia, Roberto Quiroz, Roberto Valdivia, Lenkiza Angulo, Anton Seimon and Ian Noble, 2008. Transitioning to Climate Resilient Development: Perspectives from Communities in Peru, *World Bank Environment Department Papers 115*.
- Stern, Nicholas, 2006. *The Economics of Climate Change: The Stern Review*. Cambridge, UK: Cambridge University Press.
- Tanner, Thomas and Tom Mitchell, 2008. Introduction: Building the Case for Pro-Poor Adaptation. *IDS Bulletin*, 39 (4), pp. 1-5.
- Tschakert Petra, 2007. Views from the vulnerable: Perceptions on climatic and other stressors in the Sahel. *Global Environmental Change*, (17), pp. 381-396.
- van Aalst, Maarten, Terry Cannon and Ian Burton, 2008. Community level adaptation to climate change: The potential role of participatory community risk assessment. *Global Environmental Change*, 18 (1), pp. 165-179.
- Vernon, Tamsin, 2008. The Economic Case for Pro-Poor Adaptation: What Do We Know? *IDS Bulletin* 39 (4), pp. 32-41.
- World Bank, 2009. *World Development Report 2010: Development and Climate Change*. Washington, DC: The World Bank.

Annex 1: Call for Proposals

GRANT COMPETITION ON CLIMATE ADAPTATION

Submit your innovative idea by **May 18, 2009**

What is the Development Marketplace (DM)?

The DM is a competitive grant program administered by the World Bank. The 2009 global competition is funded by the Global Environment Facility (GEF) and additional DM partners and aims to identify 20 to 25 innovative, early-stage projects addressing climate adaptation. The DM is a unique opportunity to turn your idea into reality. If selected, your project could receive up to US\$200,000 in grant funding for implementation over two years.

Competition Theme

The grant competition on climate adaptation focuses on three sub-themes:

1- Resilience of Indigenous Peoples' Communities to Climate Risks

Promote Indigenous Peoples communities' and organizations' development of innovative ways to conserve agriculture, land, water and soil management practices; apply innovative adaptation plans and communication strategies based on indigenous systems to accelerate learning and knowledge sharing on climate change adaptation.

2- Climate Risk Management with Multiple Benefits

Empower poor communities to test innovative, low-cost strategies to spread climate risk and forge innovative partnerships that increase vulnerable communities' access to climate risk management knowledge, information and services that produce multiple social and environmental benefits; use innovative means to help educate communities on climate risks that lead to empowerment for action.

3- Climate Adaptation and Disaster Risk Management

Develop innovative arrangements that diffuse climate-related disaster risks faced by the poor and vulnerable; create innovative, low-cost approaches for spatial planning for climate resilience and for construction of housing and local infrastructure resistant to climate-related disasters; improve the capacity of local communities to access and use multi-hazard risk information to enhance their early warning systems and other community-based responses to climatic extremes and climate change. A more detailed description of these sub-themes is available in the competition guidelines on the DM website.

Who can apply?

Special eligibility criteria apply to sub-theme one. For sub-themes two and three, non-governmental organizations, civil society organizations, foundations and development agencies based in the country of implementation may apply without additional partners. All other groups must partner with at least one organization; the type of partnership varies across types of applicants. Individuals cannot apply. For more details on partnerships and eligibility criteria, check the guidelines on the DM website.

Language

Consistent with past World Bank small grant programs for indigenous peoples, proposals for sub-theme one may be submitted in English, Spanish or French. For sub-themes two and three, proposals must be submitted in English.

How do I apply?

Proposals must be submitted through the DM online application form available on the DM website. If you do not have access to internet, you can contact the nearest World Bank Public Information Center. Only proposals received before May 18, 2009 at 6 p.m. EST (22:00 GMT) will be considered.

Contact us:

For further information on the competition, application guidelines and selection criteria, visit the DM website or contact the DM team at dminfo@worldbank.org

Annex 2: The Assessment Process

The assessment process comprised a quick initial screening for eligibility and three rounds of assessment as described in the following.

Proposal screening

Screening, conducted immediately once the call for proposals closed, aimed to eliminate those that failed to meet the eligibility criteria. Screening was based solely on eligibility criteria whereas assessment was a qualitative evaluation using quality criteria. Typical reasons for proposals being deemed ineligible included:

- Failure to link project idea to climate adaptation or climate change
- Submitting to multiple sub-themes
- Proposed academic studies or research as opposed to community based adaptation action
- Failure to comply with basic organizational requirements as when a non-indigenous grant seeker applied to the sub-theme reserved for indigenous peoples' organizations (and was not linked to one); ineligible partnership type such as two private businesses.
- Incomplete submissions in which grant seekers did not respond to the questions asked; write-up very vague or incoherent.
- Failure to comply with basic language criteria.

Assessment

Eligible proposals were subsequently evaluated against the DM's five standard assessment criteria established in its call for proposals (innovation, measurable results, project design and organizational capacity, sustainability of impact, growth potential) (See Table 26).

Table 26: DM's five assessment criteria

Innovation	Innovation is a major differentiating element of DM competitions compared to other development grant programs. All proposals selected for funding should incorporate new methods that go beyond traditional development projects.
Measurable Results	A project should have clear and measurable results to improve beneficiaries' climate adaptation practice during the DM funding period. Quality of proposed outcome indicators and the measurement method should be carefully considered.
Project Design/ Capacity of the Organization.	A project should have a realistic plan with concrete steps/activities to achieve the objectives. Capacity of the organization(s) to implement the project should be assessed.
Sustainability of Impact	Sustainability of results projected by financial and organizational resilience should be assessed. Revenue-generating projects should indicate the break-even point. For those with breakeven points

	occurring post-DM support and for non-revenue-generating projects, assess their plan for mobilizing financial resources needed to sustain their impact.
Growth Potential	Potential to have a large scale development impact is highly desired. Possible constraints and opportunities to scaling up/replicating should be considered.

Note: Application of an existing project to a different geographical area or a different beneficiary group is not considered as innovative in this competition.

Assessment took place in three phases. In the first round, the proposals were evaluated only on innovation. The second and third assessment round used all five criteria.

The assessment process lasted five months and involved more than 200 volunteer sector specialists from outside and inside the World Bank. Until the third assessment phase, indigenous peoples’ proposals were assessed separately by specialists with experience in working with indigenous peoples. The screening and assessment process narrowed down the applicant pool of 1,755 proposals to 346 semi-finalists, 100 finalists (plus seven “runner-up” finalists) and 26 winners.

The third and last phase of assessment took place during the DM event held at World Bank Headquarters. A jury, composed of management-level practitioners and leading climate change specialists, was convened to select the winners. Jury members worked in pairs of two. During 15 minute interviews, each finalist was approached by two distinct pairs of jury members assigned to them to engage in a question and answer session. Strict adherence to a 15 minute time limit for these question and answer sessions were maintained with the help of a jury guide. Jury teams were asked to rank and submit their top four project choices before convening in a plenary meeting where winners were chosen, some through consensus and some through voting.

Annex 3: Eligibility Requirements and Organizational Make-up

To be considered for DM 2009 funding, grant seekers were required to meet a number of eligibility requirements, which are outlined below.

<u>Sub-Theme</u>	Each project idea submitted to the competition was required to focus on one of the three sub-themes. Applicants were allowed to submit proposals to more than one sub-theme provided the proposals were markedly distinct.
<u>On-the-Ground Results</u>	The proposals were required to focus on a group of beneficiaries that would be impacted directly by the project. The DM would not fund projects where academia is the primary beneficiary of the project.
<u>Organization Type</u>	Organizations eligible to apply included non-governmental organizations (NGOs), other civil society organizations (e.g., community associations, faith-based groups, labor unions, etc.), private foundations, development and government agencies, academia and the private sector, providing each is a legally registered in a member country of the World Bank, has an established bank account in its name, and is able to receive international financial contribution (in US dollars). For Sub-theme 1, applicants must be from Indigenous Peoples (IP) communities, IP not-for profit and non-governmental organizations, and IP research centers or universities located in the country where the project will be implemented.
<u>Partner Requirements</u>	For sub-themes 2 and 3, organizations based in the country of implementation could apply without a partner. Those located outside of the country of implementation, were required to select a partner based in the country of implementation. Both parties could not be private businesses, academic institutions, or local, national or regional government institution. For sub-theme 1, because the World Bank can only enter into a Grant Agreement with a legally registered entity, an IP community or IP group that does not have legal representation but sought to apply could designate a non-governmental organization or other civil society organization, a private foundation or a development agency that is legally registered in the country of implementation to apply on its behalf. In such cases, the relationship between the IP community or group and the applicant entity had to be made explicit in writing in the implementation capacity of the organization(s) question of the short form application.
<u>Implementation Time Frame</u>	Winners have two years to implement their project upon initial fund disbursement.
<u>Award Size</u>	Requests for DM funding must not be greater than US\$200,000 or less than US\$50,000.
<u>Language</u>	Consistent with past World Bank small grant programs for indigenous Peoples, proposals for sub-theme 1 were submitted in English, Spanish or French. For sub-themes 2 and 3, proposals were required to be submitted in English. Irrespective of sub-theme, all finalists were offered translation services on an “as needed” basis to comply with the DM requirement that all full proposals are submitted in English to the jury panel that selects the winning proposals.

Many types of organizations could apply to the DM either alone or in partnership with another organization, but individuals were not eligible. For the sub-themes on climate risk management with multiple local benefits and disaster risk management, applying organizations could be NGOs, other civil society groups, private foundations and development agencies. Government agencies, academic institutions and private businesses could also apply, but only in partnership with an organization of a different type. At least one of the parties involved was required to be based in the country of implementation, forcing developed country applicants to partner with a local organization. Organizations had to be legally registered and have a bank account in their own name.

For the sub-theme on resilience of indigenous peoples (IP) communities to climate risks, applicants had to be from IP communities, IP not-for profit or nongovernmental organizations, or IP research centers located in the country of implementation. IP-eligible applicants were allowed to apply in partnership with other organizations, including non-IP ones, in the same manner as

described above. IP organizations lacking legal registration (a common occurrence) could designate a legally registered organization in the country of implementation to apply on its behalf.

Organizational make-up

Although the competition was open to a wide variety of organizations, intake was dominated by CSOs, in particular by development-oriented NGOs, who comprised 54 percent of all grant seekers and registered IP NGOs, representing 21 percent of all grant seekers (see Table 27). The remainder of the intake was made up of universities (13 percent), private for-profit organizations (7 percent), development agencies (3 percent) and government agencies (2 percent). Ninety-eight percent of these organizations were based in developing countries; more than half of them indicated that climate change formed a major part of their organizational mission. Others looked to add an adaptation component to their work.

Table 27: Types of organizations seeking DM funding (intake stage)

Organization Type	Sub-theme							
	Resilience of Indigenous Peoples to Climate Risks		Climate Risk Management with Multiple Benefits		Climate Adaptation and Disaster Risk Management		All Sub-themes	
	No. of proposals	Share of total (%) N=1,755	No. of proposals	Share of total (%) N=1,755	No. of proposals	Share of total (%) N=1,755	Total	Share of total (%) N=1,755
Non-Governmental Organization (NGO) or other Civil Society Organization	...		633	36.1	318	18.1	951	54.2
Academia or Research Organization	...		111	6.3	53	3.0	164	9.3
Private Business	...		100	5.7	28	1.6	128	7.3
Development Agency (bilateral or multilateral) or Foundation	...		36	2.1	16	0.9	52	3.0
Government	...		23	1.3	18	1.0	41	2.3
Registered IP NGO	245	14.0		245	14.0
Unregistered IP Community Designatee	81	4.6		81	4.6
Registered IP Research Center University	59	3.4		59	3.4
Registered Indigenous Peoples (IP) Community	34	1.9		34	1.9
Total	419	23.9	903	51.5	433	24.7	1,755	100.0

Source: DM data base. Organizational type was self-selected by grant seekers as part of the submission process.

Even as CSOs dominated the competition intake, there was a marked tendency for IP organizations and private businesses to increase, and for non-IP CSOs to decline in relative terms during the competition stages. While non-IP CSOs constituted 54 percent of the intake, they made up only 35 percent of the winners (see Table 28). The regression analysis indicates a statistically significant tendency for private businesses to advance during the selection process (see Annex 5).

Table 28: Organization type by competition stage

Organization Type	Intake		Semi-finalists		Finalists		Winners	
	No. of proposals	Share of total (%) N=1,755	No. of proposals	Share of total (%) n=346	No. of proposals	Share of total (%) n=107	No. of proposals	Share of total (%) n=26
Non-Governmental Organization (NGO) or other Civil Society Organizations	951	54.2	212	61.3	52	48.6	9	34.6
Academia or Research Organization	164	9.3	33	9.5	10	9.3	3	11.5
Private Business	128	7.3	29	8.4	12	11.2	4	15.4
Development Agency (bilateral or multilateral) or Foundation	52	3.0	16	4.6	5	4.7	1	3.8
Government	41	2.3	5	1.4	0	0.0	0	0.0
Registered IP NGO	245	14.0	28	8.1	16	15.0	7	26.9
Unregistered IP Community Designate	81	4.6	11	3.2	6	5.6	0	0.0
Registered IP Research Center / University	59	3.4	4	1.2	2	1.9	1	3.8
Registered Indigenous Peoples (IP) Community	34	1.9	8	2.3	4	3.7	1	3.8
Total	1,755	100.0	346	100.0	107	100.0	26	100.0

Source: Authors' analysis based on DM data base.

Annex 4: Variables used in the analysis

VARIABLE	DESCRIPTION
<i>From DM Database: Self-reported by applicants</i>	<i>(available for all proposals)</i>
Proposal ID	Number assigned to proposal by DM database
Semi-Finalist	Semi-Finalist Proposal
Finalist	Finalist Proposal
Winner	Winner Proposal
Implementation Region	Region of project implementation
Implementation Country	Country of project implementation
Secondary Sector	Sub-Theme
Organization Class	Type of Organization
Country	Applicant's Country
Applicant Region	Applicant's Region
Partner Organization Type	Type of organization partnering with applicant
Partner Country	Country where partner organization is located
Partner Region	Region where partner organization is located
BudgetDMRequest	Total amount requested from the Development Marketplace
Requested amount greater than 190,000	Denotes a proposal whose requested budget is less than \$190,000
Requested amount less than \$190,000	Denotes a proposal whose requested budget is greater than or equal to \$190,000
Innovation Type	Type of Innovation proposed by applicant (i.e. new process, including new mechanism to deliver an existing product or service; product in its early testing stage; new product or service; or new technology)
Innovation Stage	Stage of development of proposed innovation (i.e. proof of concept stage, early testing stage, new untested idea, proof of concept stage, or not clear).
Experience with beneficiary group	Does the applicant have experience working with the intended beneficiaries?
Mission on climate adaptation	Is the applicant's mission explicitly related to adaptation to climate change?
<i>Created by study team from reading the proposals</i>	<i>(available for all semi-finalists)</i>
Study	Projects in which a research study is conducted as a core component of the project to understand either 1) climate change 2) what are traditional responses to climate change are or 3) Indigenous People's traditional adaptation response to climate risks and subsequently aims to integrate those findings as a part of the project design.
Pre-existing 1-5	What preexisting condition contributes to vulnerability over and above climate risk?
Impact	The impact of all non climate related socio-economic-political and geographic problems on targeted populations.
Government involvement in the project	The nature of the applicant's relationship with government (local, state, national) during the project.
Policy/Other	Summarizes government involvement in the project (i.e. Policy, Planning, Input, Adversary, Other)
Level of Government	The level of government involved in the project (i.e. National, district/local etc.).
Climate Risk 1	Are the observed climate risks, if any, existing, new or both existing and new?
Climate Risk 2-5	Applicant's Observed climate risks
Climate Risk Cohort 1-4	Categorical summary of climate risks (noted in Climate Risks 2-5) depending on whether they were water related, heat related, storm related etc).
Number of Climate Risks	Sum of climate risks noted by grant seekers
Impact of perceived climate risk	Applicant's observed/and or expected impact of climate risks
Number of Beneficiaries	Intended number of beneficiaries directly impacted through the proposed project.
Primary Adaptation Type	Classification of proposed primary adaptation mechanism.

Adaptation 2-7	Classification of proposed secondary adaptation mechanisms.
Number of Climate Adaptation Actions	Sum of adaptation actions proposed by grant seekers
Classification of Adaptation	Denotes whether adaptation actions proposed are hard interventions (i.e. infrastructure, housing etc.); soft actions (i.e. capacity building, ecosystem restoration, etc); or a mix of both.
Health	Denotes proposals that recognize the health dimensions of climate change and target their adaptation mechanism in some way to mitigate the negative impact on health.
Geographic Focus Area	Geo-physical location of project implementation (i.e. mountains, coastal areas, etc)
Geographic Scope	Geographic scope of project implementation (i.e. local, provincial, district level, regional within country, international or cross border, regional etc.)
Revenue Potential	The degree to which the proposed projects generate revenues for applicants, beneficiaries, both.
Scale up aims	Defines the geographic scope of applicant's aims to scale up the proposed project.
Other	Miscellaneous notes from authors regarding scale up aims.
IP Beneficiaries	Distinguishes whether beneficiaries are either indigenous people or not.
Gender	Identifies if women are intended beneficiaries of the projects.
Unusual beneficiary group	Identifies unusual beneficiaries of the proposed projects (disabled, HIV/AIDS, blind).
Interesting innovation?	Notes innovations of particular interest
Notes	Provides misc. salient summaries of proposals as well as provides a description for categories marked "other" in the other sub-fields.

Annex 5: Probit Regression Analysis

This annex reports the results of a simple probit regression analysis of the determinants of a DM proposal advancing to the finalist stage, as well as of becoming a winner. The purpose is to investigate systematic patterns in which proposals advance (presumably because they are of high quality). As in the rest of this paper, we start with the main data set of 346 semi-finalists. For this sample, we use the coded variables on: budget requests; sub-window; types of risks addressed; number and type of adaptation ideas proposed; beneficiaries; type and stage of innovation; type and region of applicant organization; and region of implementation. The assessors selected 107 finalists (comprising 100 who were invited to the main event and 7 runner-ups) and 26 winners. The analysis estimates the influence of the mentioned variables on the probability of a proposal advancing to becoming a finalist or a winner given that the proposal is a semi-finalist.

However, only few of the included variables significantly predict the probability of becoming a finalist or winner (Table 29). Entries in the IP sub-window are significantly more likely to advance to the finalist and winner stages, reflecting a tendency of positive discrimination of IP proposals. Proposals that seek to address a clearly new climate risk (not only preexisting poverty and weather risks) likewise have better chances, controlling for other factors. This probably reflects a combination of clarity of the problem statement and relevance to the theme of adaptation to climate change. Technological innovations were significantly more likely to be selected as finalists (but not as winners), perhaps because these innovations are more tangible to assess. Proposals submitted by business organizations are also more likely to advance to the finalist and winner stages, which was surprising. Our conjecture is that many of the proposals from business were assessed positively because they proposed clear products and had well-defined goals that matched community needs.

None of the other variables were significant. The insignificant variables include: the budget requested of DM; references to IPs (beyond the IP sub-theme) and to female beneficiaries; applying in the disaster risk reduction sub-theme; the number of proposed climate adaptation actions; if the project has a very localized scope (as opposed to covering a country or a large part thereof); whether soft or hard adaptation actions or a combination thereof are proposed; whether the project has potential to generate revenue (which might help scale up); the stage of innovation; whether it is a product or process innovation; whether the proposer is an academic institution; dummies for implementing regions; and a dummy for developed country applicants.

Overall, our interpretation of these regressions is that project quality is an omitted variable. In other words, the regression variables do not capture many aspects of quality—aspects which are of critical importance to projects' chances of advancing. In particular, our variables do not capture the realism of the project ideas and the clarity of the logic that connects the grant

proposals' problem description, their activities, outputs and results. That is why so many variables are insignificant.

Table 29: Probit analysis of DM winners and finalists

	Probability of the proposal advancing to	
	Winning stage	Finalist stage
Budget requested of DM (log)	0.0281 (0.550)	-0.121 (0.338)
Sub-theme IP	1.050* (0.587)	0.882** (0.342)
Sub-theme DRR	-0.0373 (0.286)	0.0579 (0.174)
Addresses a new climate risk	0.548** (0.248)	0.474*** (0.155)
Number of climate adaptation actions	0.107 (0.130)	0.0680 (0.0793)
IPs are mentioned as beneficiaries	-0.332 (0.549)	-0.0866 (0.299)
Women are mentioned as beneficiaries	-0.0657 (0.249)	-0.143 (0.161)
Project has a very localized scope	-0.00330 (0.294)	-0.0902 (0.191)
Soft adaptation actions only	-0.177 (0.655)	-0.00944 (0.413)
Both soft and hard adaptation actions proposed	-0.0573 (0.681)	-0.145 (0.431)
Revenue potential	0.158 (0.249)	-0.182 (0.156)
Early testing stage of innovation	0.402 (0.337)	-0.0311 (0.200)
Proof of concept stage of innovation	0.283 (0.354)	0.0228 (0.205)
Technology innovation	0.504 (0.324)	0.508** (0.246)
Product innovation	-0.507 (0.392)	0.286 (0.191)
Proposer is an academic institution	0.290 (0.416)	0.0918 (0.272)
Proposer is a private business	0.792** (0.389)	0.537** (0.271)
Africa implementing region	-0.479 (0.674)	0.00756 (0.439)
East Asia Pacific implementing region	-0.202 (0.681)	0.385 (0.451)
Eastern Europe/Central Asia implementing region	-0.0575 (0.774)	-0.0895 (0.556)
Latin America/Caribb implementing region	-0.00747 (0.661)	0.317 (0.437)
South Asia implementing region	-0.761 (0.715)	0.0578 (0.448)
Developed country applicant	0.248 (0.341)	0.0557 (0.243)
Constant	-2.677 (6.702)	0.352 (4.108)
Pseudo R2	0.1770	0.1001
Observations	346	346

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

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