Guidelines for Project Identification and Screening

Nordic Development Fund

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Multiple criteria for screening climate change projects

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1. Background

In March 2010 a paper was submitted to the NDF Board entitled Climate Change Screening: Selection of Projects Eligible for NDF Support. This paper contained preliminary ideas about the criteria for determining the suitability of projects for NDF financing, and referred to the various issues that may arise when potential co-financiers or project beneficiaries are aware that grant funding may be available for their projects. The general conclusion was that it was necessary for parties interested in attracting NDF finance to be able to demonstrate the significance of climate in the projects concerned, and specific criteria were proposed for the screening of adaptation and mitigation projects.

Experience at the project level and a series of strategic discussions with major partners (primarily World Bank, ADB, IADB) regarding the criteria suggested in the March 2010 paper subsequently led to refinement of the recommendations contained therein. This process also brought about a clearer understanding of how the selection of projects for screening should stem from the analysis of country and sectoral priorities, and the practical constraints that are faced in so doing. A further paper presented to the Board in December 2010 entitled Project Identification and Screening reviewed and built upon this experience, broadening the scope of the previous paper and providing more in-depth treatment of the project screening criteria originally proposed.

The screening procedures that have been developed illustrate the fact that adherence to NDF’s climate change mandate has involved a considerable departure from past practice, in which a minimal contribution was made to the design of co-financed projects. Ensuring that proposed projects really are climate-related implies a fundamental change in the institution’s responsibilities and way of doing business.

NDF’s mandate is to support climate change and development. Therefore, the strategy that has been adopted is to support nationally appropriate and economically justified projects that have significant and positive climate change impacts. As indicated in the findings of the independent evaluation report on NDF’s performance completed in May 2012, the screening process has so far been very successful in rationing the scarce funds NDF has available to support climate change adaptation and mitigation activities, and ensuring that basic criteria – i.e. economic justification and climate change relevance – have been met in approved projects. However, in practice many considerations are taken into account in determining whether or not to support a given activity. Relevant aspects are wide-ranging and include technical, economic, social, political, and administrative issues.

In light of the growing number of projects submitted for NDF consideration that pass the basic climate and economic tests, and yet have to be rejected, it has been found necessary to employ a systematic procedure for addressing project suitability, not only in terms of the two basic criteria that have been emphasized to date, but also the expanded set of
social, economic and administrative aspects that need to be addressed. This revised version of NDF’s screening procedures is essentially designed to incorporate the wider set of criteria that are now employed.

2. Country and Sectoral Priorities

It is difficult to rank countries, sectors or projects scientifically with regard to priorities for climate change interventions, not only because of the uncertainties surrounding climate change itself, but because vulnerability to climate change is but one of many criteria to be used in assessing priorities for development assistance. However, the task facing NDF in the project identification process is somewhat narrower in scope since it operates under a number of important constraints; for example potential client countries are restricted to the 27 low income countries with a history of association with NDF. However, NDF’s current strategy and priorities mean that in practice only 12-15 of these countries can at the moment receive funding from NDF.

At the country level, identification of sectors and projects for NDF support also faces constraints. An important contribution the institution can make is to exert leverage on the operations of its major co-financiers by influencing project design in order to improve their climate relevance or effectiveness, and in turn contributing to more broadly defined institutional and policy reform in the recipient countries. Prioritization of overall investment strategies designed to meet various development objectives is out of the hands of an institution as small as NDF, but given the existence of a program of major projects, the basic screening criterion for NDF support should be the potential for making those projects more climate-relevant than they otherwise would possibly be.

While the mechanical use of indicators to precisely indicate priorities is not appropriate, the foregoing judgment can be assisted by project selection based on vulnerability to climate change, taking into account national priorities, local institutional capacity, recent and proposed projects, and the activities of other development institutions. NDF seeks to work with potential co-financiers in developing projects at a sufficiently early stage for the institution to exert maximum leverage in promoting climate-related activities in project design.

3. Defining Climate Projects

The NDF strategy approved by the Board in December 2011 involves support for both adaptation and mitigation initiatives. Adaptation covers a wide range of activities that will enhance the ability of partner countries to respond to climate change-related issues such as sea level rise; storms, floods, and drought; and threats to water resources, health, infrastructure, and agriculture. Adaptation measures may include climate change impact analysis and national adaptation planning as well as "climate proofing" of sectors, geographic areas and specific projects.
Mitigation efforts are targeted at reducing greenhouse gas (GHG) emissions by measures such as improved energy efficiency, increased use of renewable energy sources, sustainable transport initiatives, and carbon sequestration.

The broad mandate to provide financing for projects contributing to climate change and development objectives gives rise to a number of difficulties in defining projects that indeed merit NDF support. Particularly given that NDF can provide grant funding, a form of moral hazard is likely to arise. There are incentives for potential stakeholders to claim that projects are climate-related when in fact they are primarily – perhaps exclusively - designed for other objectives. Such relabeling is likely to be an issue constantly faced by NDF in its role as provider of climate financing.

It should be noted that, with regard to mitigation, NDF is not subject to the constraint faced by the Global Environment Facility (GEF), which can only finance the net additional costs incurred by a country in its efforts to reduce GHG emissions (or achieve other global objectives). NDF therefore has greater flexibility, but this requires it to identify its own criteria by which to judge whether or not a project should be defined as being consistent with the new mandate.

In determining appropriate areas for NDF support it is important to be rigorous and systematic in the definition of what constitutes a legitimate climate change project (or component of a project) that it supports. In particular the distinction should be made between (a) projects (or components) in which objectives, costs and benefits relate solely to climate change, and (b) projects (or components) which are highly relevant for climate change but are primarily aimed at other development objectives.

The foregoing issues can be considered separately with regard to projects supporting adaptation to climate change, and those aimed at reducing GHG emissions and enhancing carbon sinks (mitigation). There will, however, often be cases in which projects contain both adaptation and mitigation aspects, the synergies being most apparent in renewable energy-forestry-land management linkages. In such cases, it is conceivable that projects may fail screening tests for adaptation alone or mitigation alone, but overall may be judged suitable for NDF support.

It will be noted that there are various modalities by which NDF support may be applied, including not only traditional project by project co-financing with major partners, primarily the Multilateral Development Banks (MDBs), but also mechanisms such as the Energy and Environment Partnership and the Nordic Climate Facility.

4. Adaptation

General Approach
A key feature of climate change is that in general the poorest countries tend to be the most vulnerable and have no alternative than to try to adapt to the problems that are
primarily caused by the rich and powerful countries, and over which they have no control. And within the poor countries, it is typically the poorest elements of society who are least able to take measures to protect themselves. In view of the massive social and economic consequences expected to result from climate change, both economic efficiency and social justice support the emphasis given to adaptation in NDF’s project selection. While physical and economic circumstances vary considerably, it is clear that climate change will require adaptation activities in all of the NDF client countries.

Although assistance for adaptation has formally been an objective of the GEF since its inception, in practice it has accounted for a negligible proportion of that institution’s total support for climate activities, which has been traditionally been devoted almost exclusively to mitigation. There has, however, been a growing recognition in recent years of the need to support adaptation efforts, particularly in the poorest countries. But although several major funding initiatives are now underway, no universally accepted criteria for defining adaptation projects have yet been developed by the international development community.

Project Criteria

As already proposed in the March 2010 paper, the guiding principle for NDF approval is that adaptation projects should be defined as those that are primarily aimed at responding to the adverse consequences of climate change. Specifically, the criteria should be as follows:

- Projects should satisfy standard economic and social tests (or be expected to if not easily quantified) at the national level, i.e. excluding global impacts.

- Projects should be primarily climate-related, i.e. at least 50% of total project investment costs would be incurred due to the actual or expected impacts of climate change.

Where, as will usually be the case, co-financing with MDB’s will be employed, those institutions have to be relied upon to ensure that approved projects satisfy the first of the above criteria. The second requirement on the other hand involves specific analysis that will have to be carried out by NDF staff. This will require a thorough understanding of how climate change affects project design, including quantification of the incremental investment and operating costs due to climate change, and disentangling such costs from those that are not climate-related. This is the key part of the project analysis; and there will be considerable variation in the type of information required for the various cases.

As projects will typically have multiple objectives and consequences, isolating the costs that are incurred solely as a result of climate change may in fact become exceedingly complex, but this information will have to be supplied by project proponents or potential co-financiers. For example, identification of the costs incurred because of climate change for infrastructure projects may require hypothetical redesign, possibly in terms of timing, sizing, or location. And institutional reforms which may enhance ability to address

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1 GEF support to adaptation is channelled through the Least Developed Countries Fund (LDCF).
problems caused by climate change may also be justified in terms of improving general capacity to respond flexibly to other, at present unanticipated, future challenges. Sometimes costs of an otherwise identical project may be incurred earlier than they otherwise would be as a result of climate change (perhaps a reservoir designed to store water from rapidly melting glaciers); in such a case the cost of adaptation would be the difference between the present worth of the water supply system costs with and without the expected climate change. Note also that suitability of an adaptation project for NDF support requires that excessive GHG emissions during project construction and operation are avoided.

A generic issue that arises in conducting the above analysis concerns the timeframe over which climate change is deemed to be relevant, i.e. to what extent damage caused in the past should be factored into the decision as to whether or not a project is climate-related. The global climate has always been undergoing change, but in practice a relatively conservative, but somewhat arbitrary approach is proposed. Unless convincing data suggest otherwise, project approval should be based upon consideration of climate-related damages including those that go back a maximum of ten years.

In principle, the present worth of costs incurred due to climate concerns should be compared with the present worth of total project costs, but in practice an allocation based upon investment costs alone will be sufficient. The results should be interpreted in light of the criteria for NDF support, namely that the project should satisfy conventional cost-benefit tests at the national level and that climate change should be responsible for at least 50% of project investment costs, but preferably a much higher percentage than this.

Annex 1 contains a brief summary of the above screening approach as used for the Nicaragua Disaster Management and Climate Change project approved by the NDF Board in September 2010.

**Financing Specific Components**

Thus far the criteria have been discussed in terms of the commonly observed case in which it is difficult to identify totally climate-related components, i.e. where capacity building or physical infrastructure may be required to respond to various causes or objectives. It will, however, sometimes be possible to identify explicitly climate-related components to which NDF financing may be applied. For example, a coastal zone management project may fail the 50% test, but possibly there could be one very attractive component, such as building a sea wall, that might be worth supporting, or indeed included only because of NDF’s intervention. In such a case, the NDF-financed component would be acceptable if, in addition to the requirement that the overall project be justified in standard cost-benefit terms, the component itself is economically justified and is also primarily (i.e. at least 50%) a response to climate change. In practice, determining whether or not an investment should legitimately be considered as a component suitable for NDF support will often be a matter of judgement, best arrived at by close cooperation between NDF and a potential co-financier at an early stage in project development.
Finding Suitable Projects

Experience to date indicates that it is not always straightforward to identify suitable adaptation projects for NDF support, the difficulty of disentangling climate-related costs from other project costs being a major obstacle. However, there is a growing body of physical evidence of the effects of climate change that clearly warrant immediate infrastructure development, with rapid glacier melting, storms, periods of flood and drought and sea level rise being conspicuous examples. Other types of intervention have also been shown to merit attention now, e.g. monitoring and early warning systems, training, governance and planning mechanisms, and disaster risk management, all of which may have an insurance element designed to respond to potentially catastrophic but as yet uncertain damage.

The potential long term severity of the impacts of climate change should not be a reason for diluting traditional project evaluation criteria. Of particular concern is that there may be a temptation to use unrealistically low discount rates to justify measures to combat the effects of climate change that may not be realized for many years. Indeed a role of NDF should be not only to support defined adaptation projects but equally important, to ensure that they satisfy economic criteria, rejecting those that are premature or otherwise unjustified.

5. Mitigation

General Approach

In all NDF partner countries there is major scope for mitigation activities, with abundant opportunities for “win-win” energy efficiency and fuel substitution projects, i.e. those that are justified in conventional cost-benefit terms at the country level as well as yielding global benefits in terms of reducing (GHG) emissions. In addition, there is considerable potential for carbon sequestration, large enough to be globally significant, associated with economically justified reforestation or improved forest management in some NDF partner countries, such as Bolivia and Mozambique, or via a regional approach, such as Central America or South East Asia. Moreover, support for mitigation might be justified to the extent that the recipient country may benefit from carbon financing or other external credit for climate-sensitive policies, although this should generally be seen as a by-product rather than a primary project objective.

In determining whether or not NDF support for mitigation activities would be justified, two alternative approaches may be considered. One would be that NDF should only finance (as in the case of the GEF) those activities that involve a net cost to the recipient country. In other words, in direct contrast to adaptation, eligible mitigation activities would only include those that fail national cost-benefit tests, although in global terms – i.e. when climate benefits are factored in - they would pass such tests.
However, the NDF mandate is to provide funding for both climate change and development, which can be interpreted to give the institution greater flexibility than the GEF in determining project eligibility. The shortcoming of the above approach is that if only incremental climate-related mitigation costs can be supported, NDF participation in economically justified projects will be unduly restricted and important development opportunities lost. For example, exploitation of geothermal energy in several NDF partner countries appears to offer excellent prospects not only in terms of economic development, but also of the scope for replacing the use of fossil fuels and reducing GHG emissions. The preferred strategy, which has implicitly been accepted by the Board in the approval of a number of projects, is therefore to allow NDF to support economically justified projects, say for energy efficiency, renewable energy or reforestation, as long as they have significant and positive climate impacts. This would apply even where the incremental costs of specific climate measures are either zero or cannot be disentangled from other project costs, or indeed where (positive) climate implications may not even have been considered in the design and implementation of the project.

Project Criteria

The proposed screening criteria for mitigation projects to be supported by NDF are as follows:

Projects should satisfy standard economic and social tests (or be expected to if not easily quantified) at the national level.²

Projects should have a significant climate component, i.e. the global benefits of GHG emission reduction or carbon sequestration should be at least 10% of project investment costs.

Determining “significance” requires estimation of the annual reduction in greenhouse gas emissions over the lifetime of the project, i.e. a “with and without project” comparison. This includes assessment of net changes – which may be positive or negative – in GHG emissions during the project construction phase. Complex technical assessment will typically be required of the impacts of such activities as energy efficiency investments; replacement of fossil fuels by renewable sources; transport investments; or carbon sequestration.

The annual global benefits of reducing GHG emissions should then be calculated by multiplying the reduction in the number of tons of CO₂ equivalent emitted by a figure representing the social value (in monetary terms) per ton of such reduction. (In practice, estimation of the social value of greenhouse gas emission reduction raises major conceptual and empirical issues, to be addressed below).

² For this purpose the value of any reduction in GHG emissions would not be included as a project benefit, the only exception to this rule being where, with some certainty, the reduction can be internalized in the form of carbon financing.
The present worth of the stream of annual global benefits of greenhouse gas emission reduction stemming from the project should then be compared with project investment costs. The test for climate significance will be passed if the present worth of benefits thus calculated exceeds 10% of project investment costs. Assumptions about critical variables should be highlighted where major uncertainties exist - in particular the value per ton of CO₂ emission reduction that would satisfy the 10% criterion.

An example of the approach used to screen projects for NDF funding based upon mitigation criteria is the Greater Mekong System Bioenergy project. Brief details are contained in Annex 2.

Financing Specific Components

Analogous to the case of adaptation, failure to satisfy the above criteria does not necessarily rule out a role for NDF in supporting a particular project. For example, there could be an energy efficiency project that fails the 10% test, but contains an identifiable component specifically aimed at carbon capture. NDF funding might be available for such a component. If so, in addition to the requirement that the overall project satisfies standard cost-benefit tests at the national level, minimum screening criteria for NDF financing should be that the component also satisfies similar tests at the national level, and that the global benefits resulting from the component are at least 10% of component investment costs. The basic technical analysis for assessing the merits of a mitigation component for NDF support is essentially the same as for adaptation projects, referred to earlier.

Valuing Global Emission Reduction

The major issue to be addressed in determining the justification of mitigation projects or components is the difficulty of estimating the cost of GHG emissions, and the topic continues to be the subject of intense study and debate. Obviously the lower the cost per unit of carbon emitted, the more difficult it will be to classify a mitigation project as having significant global benefits. Unfortunately, while there is a general consensus that the marginal social costs of carbon emissions will increase rapidly as the century progresses, estimates of the costs themselves vary widely. Critical determinants of this variation include not only the assumptions made about actual damage costs at any point in time, but also the assumptions made about the appropriate discount rate to use. For this purpose, little guidance is provided by the various carbon markets and carbon finance mechanisms, where a range of prices are observed, the markets being notoriously imperfect and subject to major political constraints and manipulation.

At the high end of the estimates, the Stern report, employing extremely low social time preference rates (or discount rates), comes up with between $25 per ton of CO₂ for a least cost scenario and $85 per ton for a “business as usual” scenario. Based upon this,

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the UK government has proposed using a figure of $50 per ton\(^4\). By contrast, most studies suggest a maximum of $16 per ton of CO\(_2\), while a recent World Bank publication\(^5\) implicitly uses about $8 per ton.

In view of this uncertainty, the need to ration available funds to ensure that the projects or components it supports make a genuinely significant contribution, it is appropriate for NDF to be relatively conservative in the value that it implicitly places on GHG reduction. For this purpose, studies of the global (social) costs of GHG emissions conducted by independent economists rather than the prices emerging from carbon markets are used as a basis for setting a benchmark. It is therefore proposed that in its assessment of the merits of proposed projects or components, NDF will value emission reduction at $10 per ton of CO\(_2\), and use a relatively high real discount rate of 5 percent.

Several governments have recently expressed the need to refine estimates of the social cost of carbon to make possible interventions (taxes or cap and trade) more realistic in effecting behavioral change. So the benchmark price discussed here should be subject to continual re-evaluation and adjusted in light of changes in generally accepted price levels.

### 6. Multiple Criteria

While providing support for economically justified climate change projects is the core objective of NDF, the two conditions are in practice minimum requirements; many projects may satisfy the conditions but for one reason or another may not be considered suitable – or at least of sufficiently high priority – to warrant NDF support.

In practice, many considerations are taken into account in determining whether or not to support a given activity. Relevant aspects are wide-ranging and include technical, economic, social, political, and administrative issues. Factors to be considered may have positive or negative aspects; projects may appear to be very high priority in some respects, but may fail in others. If serious enough, unsatisfactory performance relating to any one of the various factors could mean that minimum conditions for project acceptance are not achieved.

Until recently, while there has been much deliberation of the various pros and cons of alternative project ideas, and widespread awareness of the multiple objectives and constraints faced in the project selection process, the issue has been addressed at NDF in a fairly ad hoc way, with only a general reference to social issues being contained in the March 2010 Board paper. Although a scientific weighting system is not feasible, nor a quantitative ranking system proposed (due to the accuracy spuriously implied), it may be possible to ensure that the various factors that are important in justifying NDF’s


\(^5\) Development Indicators 2010, World Bank, 2010.
participation in a project can at least be made more explicit and addressed more systematically. To this end NDF has introduced a new procedure including use of a checklist to be used at appropriate stages in the project identification and selection process.

Checklist

Shown below is a checklist of aspects to be considered in assessing the merits of a proposed project;

Core Project Criteria - NDF’s mandate is to support climate change and development projects; core project criteria can therefore be summarized as:

- Climate Relevance (based on the 50% and 10% tests for adaptation and mitigation respectively, for projects or components as appropriate)
- Economic Justification – based on judgment that the project satisfies standard cost-benefit tests such as the internal rate of return (IRR)

Other Project Level Aspects - Satisfactory achievement of the core objectives requires a host of supporting conditions to be met6. While they may not be core objectives in themselves, and although it will generally not be appropriate to designate quantitative thresholds, the following aspects may be sufficiently important to determine whether or not a project should be supported, bearing in mind that they may be positive or negative:

- Institutional capacity to manage/implement the project, including administrative structures, human resources, financial sustainability, general absorptive capacity etc
- Environmental impact on air and water quality, natural resources, etc7 (for adaptation projects, environmental issues should importantly include implications for GHG emissions during project construction and operation)
- Other global aspects (biodiversity, international waters)
- Consistency with national development plans
- Contribution to poverty alleviation
- Proactive focus on gender issues
- Other social impacts (e.g. indigenous people, resettlement)
- Potential sector or country-wide impact

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6 For example, adequate institutional capacity is a necessary condition for achievement of the targeted IRR, while in principle environmental costs and benefits should be incorporated into the cost benefit calculation.
7 Considerations on environmental impacts are usually made by using the safeguard policies of NDF’s financing partners as reference as well as environment impact analyses (EIAs) made by these institutions.
- Future project identification potential
- Support for innovative technology, financing or project delivery mechanisms
- Evidence of ownership/commitment by co-financing partner/ national executing agency (e.g. by financial contribution)
- Relation to other development projects/activities (multilateral/bilateral/national)
- Governance, anticorruption and integrity issues

**Value Added** - In purely financial terms, NDF’s contribution to economic development is relatively minor. The basic rationale for its existence therefore lies in its ability to influence development projects that are primarily financed from other sources. The potential “value added” by NDF’s support for a particular project can therefore largely be assessed in light of the relationship with the activities of other development partners, including the following aspects:

- Distinct and substantive role of NDF in project identification and design (while this role primarily refers to climate-relevance, NDF may also provide technical support in other areas, including engineering, institutional, economic and social aspects)
- Leverage/influence on co-financier (not only with regard to a specific project but also in terms of the co-financier’s own capacity/policy)
- Support for Nordic development policy priorities, including support for sectors or activities in which Nordic companies or institutions have particular expertise

**Implementation** - Implications for NDF’s own capacity to implement selected projects, including:

- Administrative issues – administrative costs, M&E, legal structure, project set-up (procurement arrangements, number of contracts, special accounts etc.), implications for joint vs. parallel financing, project size.
- Sector balance
- Adaptation-mitigation balance
- Country/regional balance
Procedure

The above checklist does not contain anything that is new to NDF, but is simply an aid to systematizing what has already been done in a more informal way. Until recently, the first time the institution as a whole considered a project in its entirety was at the Project Committee stage which takes place prior to submission to the Board for pipeline approval. The procedure that has now been introduced is that this committee is informed of the project details at a much earlier stage in the project identification process, when it is early enough to effect strategic changes in the proposed activity, i.e. at the pre-pipeline stage. The precise timing is left to the country manager concerned, the objective being to ensure that the project is reviewed in outline terms before the staff member concerned has invested too much time in it, the process being restricted to those projects where the concerned staff member feels reasonably confident that the project will in fact survive the approval process. The checklist itself is employed at that stage and subsequently at the discretion of the country manager; the committee will still meet just before the pipeline submission when the checklist will again be used and individual items discussed.

It should be noted that the procedure does not imply passive acceptance of the various alternative projects submitted to NDF by prospective co-financiers as long as the various criteria are satisfied. Indeed, the checklist and procedure should be used to make more effective the increasingly proactive role that NDF already plays in influencing project design and selection on the part of its country and co-financing partners.

7. Summary and Conclusions

Ever since receiving its climate change mandate, NDF has adopted a “learning by doing” approach, experimenting with various financing modalities and approaches, with the intention of defining its comparative advantage, and a niche in which it can be most effective. It appears that this is being achieved. By insisting upon relatively rigorous tests to determine the acceptability of climate projects for its support, while systematically addressing the host of social, economic and administrative aspects of its projects, NDF is already developing a reputation among its major co-financing partners as a substantive contributor to project design.

Thus, while in a general sense the main thrust of NDF financing continues to be traditional co-financing of individual projects with the established partners, use of its screening criteria represents a major change, and indeed may be defined as innovative in that it implies a significantly new approach for the institution. NDF staff are now required to acquire in-depth technical understanding of projects considered for support, and will often require potential co-financiers to supply information on climate and other aspects of projects that would otherwise not be forthcoming. Moreover, while it is essential to promote investment in genuinely climate-related activities, it will be equally important for NDF staff to ensure that projects or components supported are justified in conventional economic terms as well as being sensitive to a range of other social, administrative, and strategic issues. Critical analysis of the merits of projects submitted for NDF consideration therefore implies a significant departure from the traditional
relationships maintained with co-financing partners.

It should be emphasized that while the approach described here suggests some quantitative indicators for screening projects or components, the intention is essentially to establish rough guidelines within which NDF staff should apply their professional judgment in determining whether or not projects or components can be defined as adequately climate-related. Estimation of precise climate-related costs or benefits to determine the extent to which a project qualifies or does not qualify for support is certainly not called for. Prioritizing project identification and selection is not an exact science at the best of times, and the many physical uncertainties, imperfect market conditions and the unavoidable need for value judgements, make this especially true in the case of climate change.

With regard to both adaptation and mitigation, project experience gained in the last three years suggests that the preliminary thresholds for project acceptability outlined here are both useful and feasible, with there being a reasonable balance between the demand for and supply of NDF funds. However, as experience grows, consideration should continually be given to revising the stated criteria. For example there may emerge increasingly clear examples of projects in which climate adaptation is a primary objective, or where adaptation is becoming increasingly costly; or the estimated costs of GHG emissions may show a significant increase. Certain social issues may also become increasingly in need of additional development support. More generally, it is possible that growing demands for NDF funding support may require the criteria to become more strict in order to ensure that support is given to the highest priority projects. The potential for these various developments will require the continual updating and re-evaluation of the screening criteria.
Annex 1: Adaptation example - Nicaragua Disaster Management and Climate Change Project

The Project
The overall objective of the project is to reduce the vulnerability of rural populations of Nicaragua to climate change through risk management actions based on the management and conservation of natural resources in critical watersheds. Total project cost is $13.5 million, of which $10 million is financed by IADB, $3 million by NDF, and $0.5 million by the Government of Nicaragua. The project has three major components, as follows: Component 1: Natural resources management with the aim of reducing disasters and adapting to climate change ($4.41 million). This includes increasing forest cover, sustainable forest management and soil conservation; training in climate resilient production systems and sustainable production practices; and establishing measures for water harvesting, water capture, and CO\(_2\) sequestration. Component 2: Infrastructure to help reduce losses due to extreme weather ($5.12 million). This is based on identification of most vulnerable sites, and measures to protect houses, roads, bridges, schools, and health centres from flooding and landslides. Component 3: Capacity development ($1.65 million). Includes risk management plans, hazard mapping, municipal climate change planning processes, development of payment for ecosystem services, climate change modelling, and institutional strengthening in the Environment Ministry, training of staff and local stakeholders. In addition, the project includes unallocated administrative, financial, and monitoring an evaluation costs of $2.32 million. Each component and the overall project satisfy standard economic justification criteria.

Climate Change and Project Design
In view of the well documented history of exposure to extreme climatic events in Nicaragua, the project is essentially designed to address problems caused by climate change. Nevertheless some elements will be relevant in responding to other possible natural disasters, in particular earthquakes, as well as effecting more general institutional reforms and ability to respond to various, as yet unknown, contingencies. The NDF screening process consisted of a detailed examination of each component and major sub-component of the overall project, in each case identifying those costs that could be defined as exclusively responding to climate change. For example, in Component 1, these would include only the additional costs of soil conservation, over and above those that would be required in a stable climate environment; in Component 2, only the additional cost of protective infrastructure construction; and in Component 3, only the cost of additional institutional reform measures or staff training activities.

Results
Overall, as the following table shows, the project satisfies the minimum NDF screening criterion, a fairly strict interpretation of the procedure resulting in with just over 50% of project costs being estimated as specifically responding to the problems caused by climate change. In general, administrative, capacity building, and institutional reform costs tend to be less climate-specific than infrastructure costs. Not included in the calculation, but increasing the attractiveness of the project in light of NDF’s new
mandate, is the contribution the project might make in terms of mitigation, with CO₂ sequestration being an explicit project objective.

<table>
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<th>Climate Costs ($)</th>
<th>Non Climate Costs($)</th>
<th>Climate Costs as % of Total Costs</th>
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Annex 2: Mitigation example - Climate-Friendly Energy in the Greater Mekong Subregion (GMS)

The Project
The objective of the project is to improve access to clean energy for low income rural households in the GMS, promoting renewable energy based on locally available resources in ways that are not only cost effective but also contribute to a reduction in greenhouse gas emissions. Project components will include the following: (i) policy and capacity building; (ii) efficient utilization of biomass for bioenergy and organic fertilizers; (iii) small-scale liquid biofuels; and (iv) improved cook stoves. It is expected that the overall project as well as each of the identified components will pass standard economic justification tests. Total project cost, to be financed by the Asian Development Bank, is estimated at $80 million.

Climate Change and Project Design
Based on preliminary estimates, the project has the potential to reduce greenhouse gas emissions by 87,550 tons of CO$_2$ equivalent per year by 2017. This will be achieved by: (i) installation of 44,000 biogas digesters, which will replace high levels of natural decomposition with production of biogas (18,876 tons of CO$_2$ per year); (ii) installation of 50,000 improved cook stoves, which use fuels more efficiently (49,874 tons of CO$_2$ per year); and (iii) 10,000 hectares of jatropha which will produce 1,100 liters oil per hectare per year (18,800 tons of CO$_2$ per year), and which will be used locally to reduce on-farm fuel costs, with surpluses exported to regional refineries for processing into higher value fuels.

In considering the suitability for NDF support of this preparatory TA, the following assumptions were made about the eventual ADB investment project that will stem from it: (a) project cost of $80,000,000 is spread evenly over a four year construction period (b) annual reduction in greenhouse gas emissions will be 87,550 tons of CO$_2$ starting in year 6 (c) global value of reducing one ton of CO$_2$ is $10 (d) project life is 25 years, and (e) test discount rate is 5%. The net change in GHG emissions during project construction was assumed to be neutral.

Results
The eventual investment project, and therefore the preparatory TA, satisfies the NDF screening criterion that global benefits of greenhouse gas emission reduction at least equal 10% of project investment costs. At a discount rate of 5% the present worth of project investment costs is $71 million and the present worth of annual reductions in greenhouse gas emissions $9.7 million. The value of the reduction in greenhouse gas emissions is thus about 14% of project investment costs, certainly a “significant” consequence of the proposed ADB project. Not quantified here, but an additional reason for defining this project as climate-related is that it will make an important contribution to agricultural resiliency, and therefore ability to adapt to climate change in the GMS.