

# CLIMATE INVESTMENT FUNDS

SCF/TFC.6/Inf.2  
October 29, 2010

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Meeting of the SCF Trust Fund Committee  
Washington D.C.  
November 11, 2010

## **STRATEGIC ENVIRONMENT, SOCIAL AND GENDER ASSESSMENT OF THE CLIMATE INVESTMENT FUNDS**

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## Summary of Findings

### Assessment of Relevance of Environmental, Social and Gender Issues Towards the Objective of Achieving a Shift to Clean Technologies

- Environment co-benefits (reduction in local pollutant emissions) are directly correlated with reduction in greenhouse gas emissions in the case of energy efficiency, power generation technologies, and urban transport technologies financed under the CIFs. Hence reducing greenhouse gas emissions will generally automatically result in reducing emissions of local environmental pollutants.
- Social and gender co-benefits do not occur automatically when clean technologies are implemented, with the exception of shifting from biomass solid fuel use in households to cleaner energy services. The latter has a direct impact on women and children's health, as well as women's time/productivity. Other clean technology/renewable energy projects/programs/plans need to be designed in a "pro-poor way" for social and gender co-benefits to be realized.

### Approaches and Instruments for Environmental, Social, and Gender Mainstreaming

- There is a menu of options from which countries and development partners can choose appropriate and adequate tools to integrate environment, social and gender considerations based on the need of the respective CIF program, the objectives and scope of the investment program, the available time and the cost.
- Some tools integrate both environmental and social considerations. These tools employ an analytical and participatory approach, and include Environmental Impact Assessment, Strategic Environment Assessment (SEA) and Policy SEA. The social dimension increases across each of these tools, with Policy SEA being the tool where the social dimension is most taken into account.

### Maximizing Environmental, Social, and Gender Co-Benefits Clean Technology Fund (CTF)

- Environment co-benefits are directly correlated with greenhouse gas reductions in the case of the technologies being supported by the CTF. However, CTF investment plans generally do not discuss social and gender benefits in great detail.
- In line with the principles that guide the CTF, and taking into account that the CTF has multiple objectives with the primary one being providing incentives for low carbon development, there is still a great opportunity to increase and maximize social and gender co-benefits as CTF projects are prepared.

### Maximizing Environmental, Social and Gender Co-Benefits in the Pilot Program for Climate Resilience (PPCR)

- The PPCR Phase 1 proposals give significant attention to applying participatory approaches in the context of preparing the Phase 1 proposal, but also in terms of their plans to prepare the Strategic Program for Climate Resilience (SPCR). In some Phase 1 proposals, there are good practice proposals for putting in place institutional mechanisms that will continue to foster a dialogue on climate issues beyond the preparation of the SPCR (e.g. NGO dialogue forum in Cambodia or including climate change in the university syllabus in Bolivia). SEA is also often proposed as a key tool to ensure that consultation and analysis is conducted in a structured way during the course of preparation of the SPCR, albeit this often is depicted as a

parallel activity rather than as a building block to prepare a participatory and analytically sound SPCR.

- There is seemingly less of an analytical and participatory approach taken in terms of describing in the Phase 1 proposals the identified proposed investment areas (be they territorial or sectoral) and this could be strengthened considerably through the application of selective indicators.
- The challenge of integrating climate resilience in development planning, based on the experience of other programs, is how to ensure there is continuous engagement beyond the preparation of the first national SPCR and the duration of the PPCR program. From other programs, it is clear that the *process* to prepare the first SPCR is therefore crucial in fostering broader stakeholder ownership and continued engagement in the longer term. This suggests that the activities supported by the PPCR program (Phases 1 and 2) need to further emphasize institutional mechanisms that allow for a sustained dialogue on climate adaptation, as well as to use a strong analytical and participatory approach to prepare the SPCR. In that regard, the principles and approaches of an SEA need to be emphasized in preparing the SPCR, rather than the SEA report itself.
- Gender is only effectively integrated in PPCR Phase 1 proposals when there is already existing information in the country from gender assessments. This suggests that a particular emphasis on gender is warranted (applying the tools and approaches that the MDBs already have at their disposal) if it is clear from the country context that women, in particular, could play a key role in shifting behaviors towards greater climate resiliency or if they are disproportionately affected.

#### Maximizing Environmental, Social and Gender Co-Benefits in the Forest Investment Program (FIP)

- The FIP Design and Programming documents highlight the multiple objective nature of the program, in a way that is consistent with REDD plus, i.e. emphasizing not only reduction of emissions from deforestation and forest degradation by addressing underlying drivers, but also contributing to multiple co-benefits such as biodiversity conservation, protection of the rights of indigenous peoples and local communities, poverty reduction and rural livelihoods enhancements. Further, recognizing the forest dependence of indigenous peoples, the FIP has established a dedicated mechanism to provide grants to indigenous peoples and local communities in country or regional pilots to support their participation in the development of the FIP investment strategies, programs and projects.
- The process of choosing and justifying investments in a FIP program will be key. Some thought needs to be given to this process so that all co-benefits can be maximized, particularly since environmental and social co-benefits are highly intertwined with climate related objectives. This could be through a combination of quantitative analysis, coupled with a participatory discussion of the underlying drivers of deforestation and forest degradation and identifying the key interventions that need to be made for progress.
- There is also a real opportunity to establish a common platform to an integrated approach to environmental and social assessment with other similar programs, such as UN-REDD and FCPF, which is in line with current MDB procedures and safeguard requirements.

#### Maximizing Environmental, Social and Gender Co-Benefits in the Scaling-up Renewable Energy in Low Income Countries (SREP)

- SREP documentation is at an early stage. The Design Document makes reference to co-benefits, such as reduced local pollution, increased energy security, enterprise creation, and increased social capital, particularly greater involvement and empowerment of women and other vulnerable groups.
- The literature review (from Chapter 1) shows clearly that there is potentially more opportunity for certain social co-benefits such as increased employment, particularly for women, linked with small-scale renewable energy services. This suggests that the SREP Operational Guideline needs to highlight these aspects and ask for appropriate analysis and a gender-sensitive consultative approach in the development of the SREP investment plan.
- Chapter 1's literature review indicates that in the case of most renewable energy applications (with the exception of household level interventions which are excluded from the SREP Design Document), the project needs to be designed in a pro-poor way if social and gender co-benefits are to be maximized, as these do not occur automatically. This suggests again that SREP Operational Guideline needs to specify that the SREP Investment Plan clearly explain how social co-benefits, in particular, will be realized and/or maximized as investments are developed.

### Results Framework

- The SEA proposes a “dashboard” of indicators for each CIF program (that capture, technology, environmental, social, and gender aspects) and suggests that they be measured at a country level continuously over the investment lifetime and beyond to assess program impact and outcome. It is also recommended that identification of project level indicators be left to the country and MDB teams with the caveat that project level indicators should feed into the national indicators measured at the level of the results framework.

### Mal-adaptation at the Level of the Overall CIF Program

- From a topic or issues standpoint, there appears to be a potential for mal-adaptation linked with biofuel production and the reduction of deforestation and forest degradation under the FIP. This is because in many instances forest clearance is due to expanding the agricultural frontier.
- This suggests that including indicators on *forest/land area cleared for biofuel production* in the FIP results framework could be an important monitoring tool. It will also be important to monitor and report on this indicator in the context of progress reports within the CTF and SREP programs, particularly in countries with a FIP program or significant forest resources.

# 1 Introduction and Approach to SEA

## 1.1 Context

The Climate Investment Funds (CIF) are a unique pair of financing instruments designed to pilot what can be achieved to initiate transformational change towards low-carbon and climate-resilient development through scaled-up financing channeled through the Multilateral Development Banks (MDBs): African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank, and World Bank Group. The CIF were set up in 2008 and were designed as an interim measure to strengthen the global knowledge base for low-carbon and climate-resilient growth solutions. Donor countries have pledged over US\$6 billion from ODA to the CIF.

The two CIF funds are the **Clean Technology Fund (CTF)**, financing scaled-up demonstration, deployment and transfer of low-carbon technologies for significant greenhouse gas (GHG) reductions within country investment plans; and the **Strategic Climate Fund (SCF)**, financing targeted programs in developing countries to pilot new climate or sectoral approaches with scaling-up potential.

Targeted programs under the SCF include:

- **The Forest Investment Program (FIP)**, approved in May 2009, aims to support developing countries' efforts to reduce emissions from deforestation and forest degradation by providing scaled-up financing for readiness reforms and public and private investments. It will finance programmatic efforts to address the underlying causes of deforestation and forest degradation and to overcome barriers that have hindered past efforts to do so.
- **The Pilot Program for Climate Resilience (PPCR)**, approved in November 2008, was the first program under the SCF to become operational. Its objective is to pilot and demonstrate ways to integrate climate risk and resilience into core development planning, while complementing other ongoing activities.
- **The Program for Scaling-Up Renewable Energy in Low Income Countries (SREP)**, approved in May 2009, is aimed at demonstrating the social, economic, and environmental viability of low carbon development pathways in the energy sector. It seeks to create new economic opportunities and increase energy access through the production and use of renewable energy. The SREP program became effective only in December 2009.

The **Clean Technology Fund (CTF)** and the **Strategic Climate Fund (SCF)** are each governed by a separate Trust Fund Committee having equal representation from contributor and recipient countries. The CTF Trust Fund Committee oversees the Fund's operations, provides strategic direction, and also approves and oversees its programming and projects. The SCF Trust Fund Committee approves the establishment of its targeted programs and advises on strategic direction. SCF targeted programs include the Forest Investment Program (FIP), Pilot Program for Client Resilience (PPCR), and Scaling-up Renewable Energy Program (SREP), each of which is governed by its own Sub-Committee. "Active" observers from the UN, GEF, UNFCCC, civil society, and indigenous people and the private sector are invited to participate in meetings of the Trust Fund Committees and Sub-Committees. Decision of the Trust Fund Committees and Sub-Committee are made by consensus.

The CTF and the three targeted programs under the SCF are all at different stages of development and implementation, with the CTF being the most advanced. Each of the programs has taken an approach to programming which emphasizes country ownership and leadership (in the form of preparation of a country-level investment or strategic plan) and joint work across all the MDBs (who work closely with the country in preparing the plan through joint missions). All the investment plans for the CTF (corresponding to 13 countries) have already been endorsed by the CTF committee. Six phase 1 grant proposals (and one fast-track proposal) to develop the Strategic Program for Climate Resilience (SPCR) have been approved by the PPCR sub-committee during the SEA period. The FIP and SREP programming process/cycle are still under development, with the FIP being more advanced than the SREP.

The main tool for monitoring and evaluation of the CIF and each of the programs by their respective sub-committees is the Results Framework. The methodological approach to the Results Framework for the CIF and for each of these programs has been recently approved, but the detailed indicators of the Results Framework are still under development. These indicators focus on environmental aspects, but also social aspects and measures of sustainable development and poverty reduction. This reflects the complex and dynamic system within which the CIF investments are being planned, and the close relationship between climate and development. This also reflects the importance of maximizing co-benefits linked with climate actions and development outcomes for both donor and recipient countries.

In that context, a Strategic Environmental and Social Assessment has been conducted to provide targeted information to TF committee and sub-committee members, MDBs and recipient countries to help them in their decision making on CIF activities to ensure that positive environmental and social effects are being fully enhanced and that any potential negative effects are being monitored and managed appropriately. The SEA focuses in particular at the programming stage, as well as on the monitoring and evaluation stage in each of the CIF programs. Given that each CIF program is at different levels of development, the SEA focuses on key upcoming decision-making points for the programs and aims to provide information specifically related to these points, rather than be comprehensive in scope.

## **1.2 Objective**

The objective of the Strategic Environmental and Social Assessment (SEA) of each of the CIF programs is to assess the related environmental and social opportunities and challenges associated with related climate investments, and provide guidance on how best to maximize these opportunities and better manage related challenges. In doing so, the SEA team has drawn upon existing CIF experience, as well as broader good practice experience from similar programs.

The objective of the Strategic Environmental and Social Assessment of the CIF (as a whole) is to assess whether any of the CIF programs could adversely affect accomplishment of other CIF programs' objectives (i.e. if there is mal-adaptation), and if so, provide recommendations on how to better monitor and manage this risk.

The recommendations of the SEA therefore primarily focus on how to strengthen CIF programming, indicators and processes (such as the results framework, the programming cycle



approach, etc.) so that there is improved management of environmental and social challenges and opportunities. The information in the SEA report should also be useful for countries to be aware of related environmental and social opportunities and challenges associated with investments and thus maximize their ability to better take advantage of opportunities and manage challenges.

At the project implementation level, the responsibility for adequate environmental and social assessment and management of each investment operation lies with the collaborating MDBs. It is therefore important to note that individual operations have not been subject to this SEA as they are covered by standard safeguard procedures of the MDBs. In addition, the SEA has been closely coordinated with results monitoring efforts to ensure that relevant strategic procedures and assessments are embedded within the existing framework. This SEA is not intended to develop new institutional structures.

### **1.3 Methodology**

The SEA methodology consists of several iterative steps that rely on both analysis and stakeholder consultation to identify the priority environmental and social effects related to the CIFs and to assess the institutional procedures in place to ensure that positive synergies are enhanced and negative effects are managed adequately.<sup>1</sup>

This has entailed the following specific steps:

**a) Assessment of relevance of environmental and social issues towards the objective of achieving a shift to clean technologies**

This analysis provides information on the potential environmental, social and gender co-benefits of different technologies, the relevance of environmental, social and gender considerations in achieving the technological shift, and the important areas of focus for the results framework indicators for the CTF and the SREP programs in particular. This has been conducted through an extensive literature review. The findings of this assessment are further detailed in Chapter 2.

**b) Review of good practice mechanisms to include environmental and social aspects at the programming level**

This review drew from good practice examples from early CIF programs as well as other similar programs underway. It provides the full spectrum of approaches and tools that could be used by country and MDB teams to enhance the handling of environmental, social and gender aspects. Chapter 3 presents the spectrum of available tools to better integrate environmental, social and gender aspects.

**c) Recommendations to maximize environmental and social co-benefits and minimize related challenges in the CIFs going forward**

This analysis provides information to (i) help refine indicators related to development impact in the overall CIF Results Framework and the Results Framework for each program; (ii) identify possible enhancements to CIF programming, in particular for the SREP, PPCR, and FIP

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<sup>1</sup> In elaborating the methodology for this SEA, the team has drawn heavily on the OECD DAC's good practice guidance in applying SEA, in particular the questions posed on pages 107-108 of Applying SEA: Good Practice Guidance for Development Co-operation)

programs; and (iii) facilitate the scoping of environmental and social issues to be assessed at the project level for the CTF program, in particular. In formulating the above recommendations, the SEA team has drawn upon the information collected under Steps I and II above, as well as a review of CIF key documentations (e.g. design and programming documents) as well as CTF Investment Plans, PPCR Phase 1 proposals, and review of indicators. The findings linked to this activity are presented in Chapters 4 to 7, by each CIF program.

#### **d) Overall CIF level assessment**

This analysis focuses on the CIF level as a whole. It assesses whether any of the CIF programs could adversely affect accomplishment of other CIF programs' objectives (i.e. if there is mal-adaptation), and if so, provide recommendations on how to better monitor and manage this risk. This information feeds into the design of the Results Framework, which is the main management monitoring tool for the CIF. The results of this analysis are presented in Chapter 8.

### **1.4 Consultation Process**

Consultations are a crucial part of any SEA. The SEA has relied heavily on e-mail consultations with CIF TF members and observers, the CIF MDB committee members, and to reaching out to a broader distribution through the CIF website. Given resources, no country visits were undertaken. Meetings with the MDB committee members also took place in June, as well as through audio conferences. Written feedback was also received during the course of the preparation of this report from African Development Bank, B.E.A. International, BMZ, DFID, Gram Bharati Samiti, Inter American Development Bank, Resource Conflict Institute (RECONCILE), United Nations Development Program, and the World Bank. In addition, the indicators proposed in this SEA have also been integrated in the draft updated Results Framework, and these in turn have been shared for comments with the MDB committee. The actual SEA also reviews the consultation process by the countries and MDBs in preparing their CIF investment plans and PPCR Phase1 plans.

## **2 Assessment of Relevance of Environmental, Social and Gender Issues Towards the Objective of Achieving a Shift to Clean Technologies**

### **2.1 Main Findings**

- Environment co-benefits (reduction in local pollutant emissions) are directly correlated with reduction in greenhouse gas emissions in the case of energy efficiency, power generation technologies, and urban transport technologies financed under the CIFs. Hence reducing greenhouse gas emissions will generally automatically result in reducing emissions of local environmental pollutants.
- Social and gender co-benefits do not occur automatically when clean technologies are implemented, with the exception of shifting from biomass solid fuel use in households to cleaner energy services. The latter has a direct impact on women and children's health, as well as women's time/productivity. Other clean technology/renewable energy projects/programs/plans need to be designed in a "pro-poor way" for social and gender co-benefits to be realized.

### **2.2 Methodology**

The following methodology was followed in carrying out this assessment:

- Identified published literature reviews and annotated bibliographies (in either peer reviewed journals or in the development literature), documented case studies and project impact evaluations that describe the environmental, social and gender aspects linked to clean technologies that may be financed under the CTF and the SREP programs (i.e. renewable energy, energy efficiency and urban transport). If no literature reviews existed, carried out a quick review of key documents and prepared an annotated bibliography based on these sources.
- Using these sources, prepared an Issues Table that draws together this information. Each statement in the Issues Table is substantiated with a published reference. Shared Issues Table with MDB committee, CSO observers, and TF committee members for their feedback.
- Updated Issues Table based on feedback.
- Identified whether (i) these environment or social (incl. gender) considerations are essential to achieve the technological shift; (ii) the technological shift generates environmental or social co-benefits; (iii) the technology shift is neutral in terms of environment or social considerations; and (iv) the technological shift is achieved at an environmental or social cost.

### **2.3 Results of Analysis**

Annex 1 presents information from published literature reviews and annotated bibliographies (in either peer reviewed journals or in the development literature), documented case studies and project impact evaluations that describe the environmental, social and gender aspects linked to clean technologies that may be financed under the CTF and the SREP programs (i.e. renewable energy, energy efficiency and urban transport).

For each – environment, social and gender – the matrix shows a wide variety in the impact of introducing new technologies, including positive and negative impacts. These can broadly be categorized as:

- Consideration of environment, social or gender is essential to achieve technological shift
- The technological shift generates environmental, social or gender co-benefits
- The technology shift is neutral to environmental, social or gender effects
- The technological shift is achieved at environmental, social or gender costs

In terms of environmental impacts there are generally strong co-benefits between reducing emissions and environmental impact. Many of the technologies to reduce carbon emissions also reduce air pollution with corresponding benefits in terms of air quality and health. For example bus rapid transit systems improve urban air quality and solar cookers have major health benefits, particularly for women and children through reducing household smoke. However some technologies, such as geothermal projects and bio fuel production, do carry particular risks to the local environment, which need to be managed properly. Solar photo-voltaic systems also carry risks if solar cells and dry cell batteries are not disposed off properly, as they could result in heavy metal contamination and hence major health and ecosystem impacts.

On social and gender impacts there is wide variety between the different technologies. Bus rapid transit systems offer huge potential to promote co-benefits between cutting carbon emissions and improving access to transport and employment opportunities for low-income communities. In terms of renewable energy, small scale hydro-power schemes can bring major development impacts from raising household incomes through to improving health and educational services. On the other hand geothermal power plants feed into the national grid and require a highly skilled work-force, and are unlikely to bring any direct employment benefits to local communities. In the case of several small-scale energy services, such as improved cook stoves and solar cookers, taking the gender aspect into account is often fundamental to achieve the technology shift. On energy initiatives the matrix shows examples of both positive and negative impact on local employment; while there may be new job opportunities, energy efficiency programs can also cause unemployment through the closure of small, inefficient power plants.

However, what also emerges is that where there are positive impacts on poverty and gender these do not just happen automatically through introducing a new technology but need to be planned in order to maximize the benefits. For example a BRT system will only provide opportunities for poor people if it covers low-income communities and the fare structure makes it an affordable option. The importance of considering how to maximize the development impacts of new technologies is discussed further in Chapter 4 on the Clean Technology Fund.

### **3 Approaches and Instruments for Environmental, Social, and Gender Mainstreaming**

#### **3.1 Main Findings**

- There is a menu of options from which countries and development partners can choose appropriate and adequate tools to integrate environment, social and gender considerations based on the need of the respective CIF program, the objectives and scope of the investment program, the available time and the cost.
- Some tools integrate both environmental and social considerations. These tools employ an analytical and participatory approach, and include Environmental Impact Assessment, Strategic Environment Assessment (SEA) and Policy SEA. The social dimension increases across each of these tools, with Policy SEA being the tool where the social dimension is most taken into account.

#### **3.2 Methodology**

The methodology to carry out this analysis was as follows:

- Based on a review of CIF reports and other similar program assessments, MDB reports, the literature, and consultations with MDB colleagues, prepared a short report which presents the different tools and approaches available for ensuring that environmental and social aspects are adequately addressed. This could include, among others, effective ways to share information with, consult and involve vulnerable stakeholders in decision-making, mechanisms to ensure social accountability, analytical tools that include valuation of environmental and social costs and benefits when alternatives are considered and programming is underway, strategic environmental and social assessments, and incentive mechanisms embedded within programs to ensure adequate consideration of environmental and social aspects.
- Shared report with MDB committee, CSO observers, and TF committee members for their feedback.
- Updated report based on feedback.

#### **3.3 Results of Analysis**

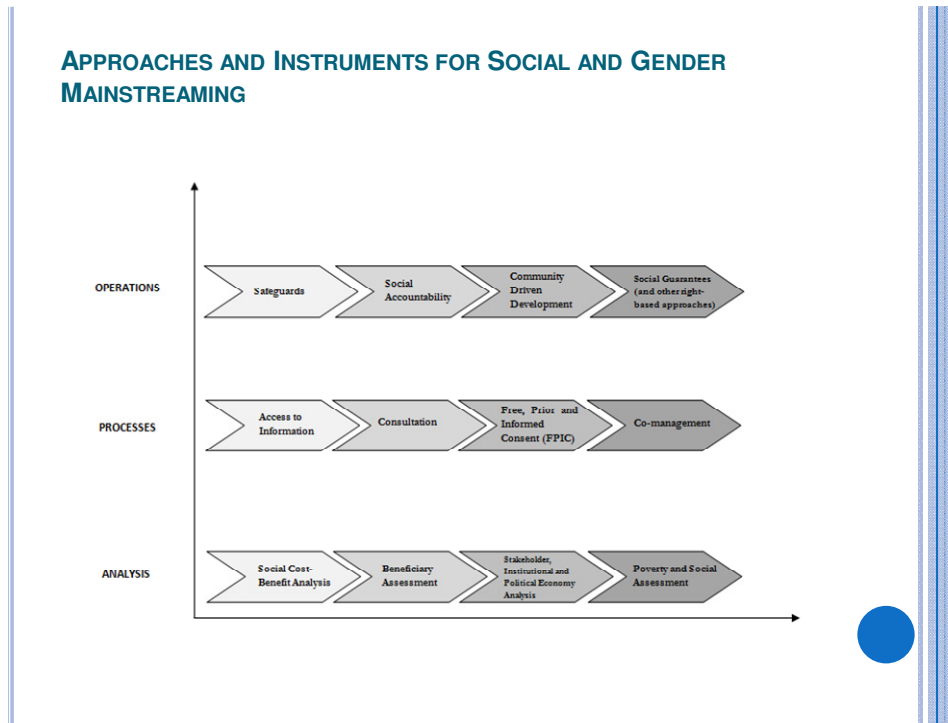
Annexes 2 and 3 present details of the complete range of options that can be used to more effectively integrate social, gender and environmental considerations in the respective CIF program. For each option we present briefly: what it is, the associated benefits, application constraints, a good practice example, and additional references.

Figure 1 below illustrates schematically how Annex 2 is organized in terms of both analytical and procedural approaches, as well as operational approaches, for social and gender mainstreaming. As Figure 1 illustrates, there is a spectrum of increasingly rigorous options that could be used to effectively integrate social and gender issues. At the operational level, these range from application of gender-responsive safeguards to approaches that embed social guarantees or other rights-based approaches within the project design. There is a similar range

for both analytical approaches as well as participatory processes, the latter ranging from simple information provision to co-management approaches.

In the case of environmental approaches, the range is similar, i.e. from safeguard approaches to ensuring environmental and social sustainability. Typically the available assessment tools (i.e. EIA and SEA) tend to employ both participatory and analytical procedures. In that regard, the policy SEA approach in particular strives to closely integrate these two on an equal footing, and utilizes several of the social and gender mainstreaming tools in Annex 2 (see Figure 2). The policy SEA approach is distinguished by an iterative process of analysis and consultation, initially with homogeneous stakeholder groups, to identify and choose priorities (see for example, *West Africa Mineral Sector Strategic Assessment, WAMSSA, Report No. 53738-AFR, World Bank, 2010, Annex 4 pp 187-212*). Care needs to be taken to ensure that powerful vested interest groups are not combined in the same consultation meeting to ensure equal representation of views. Hence carrying out a stakeholder analysis is key at the start of the process. In this process, it is the stakeholders who eventually “choose” the priorities as it is the common priorities across all the different stakeholder groups that emerge at the top.

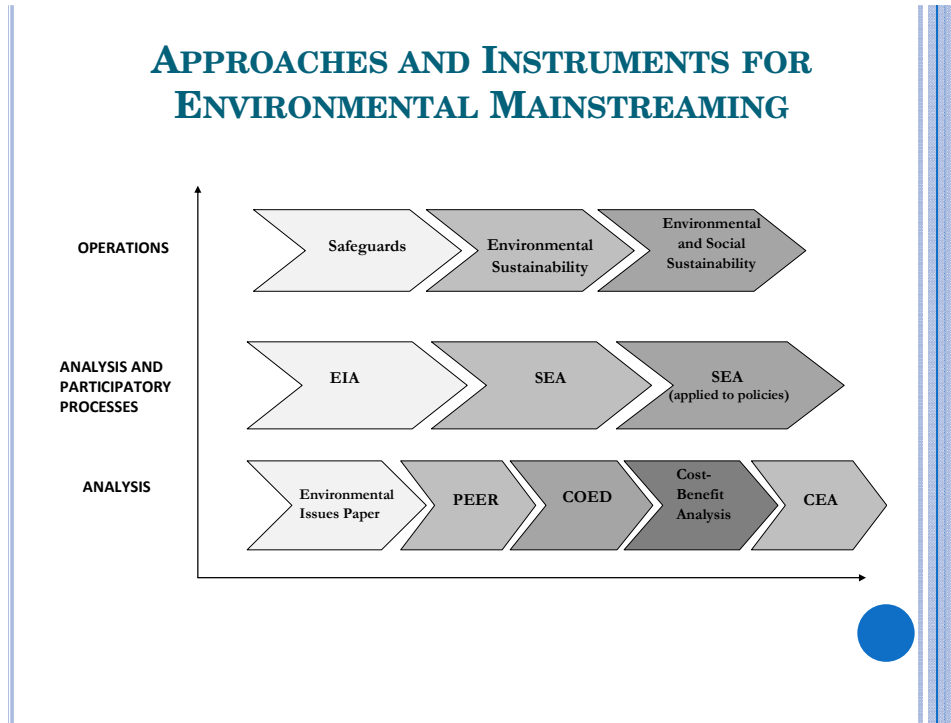
**Figure 1: Approaches and Instruments for Social and Gender Mainstreaming**



There is no one approach that is more appropriate to integrate environmental, social and gender considerations in a particular program. Typically national legislation requires certain approaches be employed (such as Environmental Impact Assessment or Strategic Environmental Assessment) or MDB safeguard policies require that other approaches be employed (such as EIA). These therefore provide important entry points for applying some of the specific analysis

and consultation approaches described in Annexes 2 and 3. Additional approaches are dependent on local cultures, the need to place emphasis on particular aspects linked with program design and impact, time and financial constraints, among other factors. Finally, it is also important to note that the good practice examples draw significantly on the MDBs' extensive experience in applying these approaches effectively in other project and program contexts.

**Figure 2: Approaches and Instruments for Environmental Mainstreaming**



## **4 Maximizing Environmental, Social, and Gender Co-Benefits Clean Technology Fund (CTF)**

### **4.1 Main Findings**

- Environment co-benefits are directly correlated with greenhouse gas reductions in the case of the technologies being supported by the CTF. However, CTF investment plans generally do not discuss social and gender benefits in great detail.
- In line with the principles that guide the CTF, and taking into account that the CTF has multiple objectives, with the primary one being providing incentives for low carbon development, there is still a great opportunity to increase and maximize social and gender co-benefits as CTF projects are prepared.
- The SEA proposes seven key indicators (that capture, technology, environmental, social, and gender aspects) and suggests that they be measured at a country level continuously over the CTF lifetime and beyond to assess CTF program impact and outcome. It is also recommended that identification of project level indicators be left to the country and MDB teams with the caveat that project level indicators should feed into the national indicators measured at the level of the results framework.

### **4.2 Introduction**

The Clean Technology Fund key document (June 9, 2008) presents principles, objectives and criteria that need to be taken into account. In that regard, the first principle (from a list of nine principles) is as follows: “The core mission of the MDBs is sustainable economic growth and poverty reduction. Climate change mitigation and adaptation considerations need to be integrated into the sustainable development process as addressing these issues contributes to the basic human needs of the poorest who are disproportionately impacted by the negative effects of climate change.”

This document also lists six objectives for the CTF, of which the top three are stated below, noting that the fund aims to finance transformational change by:

- (a) “providing positive incentives for the demonstration of low carbon development and mitigation of greenhouse gas emissions through public and private sector investments;
- (b) promoting scaled-up deployment, diffusion and transfer of clean technologies by funding low carbon programs and projects that are embedded in national plans and strategies to accelerate their implementation;
- (c) promoting realization of environmental and social co-benefits thus demonstrating the potential for low-carbon technologies to contribute to sustainable development and the achievement of the Millennium Development Goals”

Finally, the same document in its Annex A notes that investment plans, and the proposed pipeline of projects and programs, will be “assessed and prioritized” on the basis of the following four sets of criteria: (a) potential for long-term GHG emissions savings, (b) demonstration potential, (c) development impact, and (d) implementation potential. Development impact is further detailed as “poverty alleviation, fuel savings, efficiency gains, air and water quality, energy security and access, economies of scale, economy-wide impact, local industrial development potential, and environmental co-benefits.”



The analysis undertaken in this SEA focuses specifically on how to maximize one specific criteria, namely development impact, as defined in the CTF documentation, and on one objective (among several), namely realizing environmental and social co-benefits.

### **4.3 Results of Analysis**

As part of this SEA, a matrix has been developed to summarize the potential development co-benefits for the clean technologies being promoted through CTF and SREP. This has been developed through reviewing the CTF Investment Plans to identify which co-benefits are included in these plans. It would be useful to carry out a similar exercise for SREP once country investment plans have been produced.

In general the plans do not give much detail on the development co-benefits of the CTF investments. Most references to development impact are in very general terms on overall economic development and improvements in energy security and access but they do not present more specific strategies for targeting poor people in order to maximize the development impact. Most of the countries that have prepared CTF investment plans have high levels of inequality and therefore attention to equity issues and ensuring that the benefits of CTF funds are enjoyed across all income groups is important in order to respond to the specific CTF investment criteria on development impact.

If development co-benefits of addressing poverty and reducing inequality in CTF projects are to be maximized, low income groups will need to be targeted. For example, the Bus Rapid Transport systems that are included in several plans could have a major impact on improving access to jobs for poor families and reducing travel times and costs. But that will only happen if the BRT schemes cover low-income areas and fares are affordable for poor people. Also, much is made of the development impact of small scale renewable energy schemes through job creation and stimulating local markets. But that will only have a positive impact if local people are given job opportunities and appropriate training.

It should also be recognized that the development contexts in these countries vary considerably. Although all are middle-income countries, there are important differences. For example, in terms of the percentage of the population living on less than \$2 per day Colombia has 27.9%, Egypt 18.5%, Indonesia 60%, Kazakhstan 2%, Mexico 8.2%, Morocco 14%, Philippines 45%, Turkey 8.2%, Ukraine 2% and Vietnam 48.2%. In terms of the absolute poverty line of less than \$1.25 per day, Colombia has 16%, Indonesia 29.4%, Philippines 22.6%, Vietnam 21.5% and South Africa 26% (2000 figures). All the other countries have less than 5% living on less than \$1.25 per day. Colombia, Indonesia, Philippines, South Africa and Vietnam all have millions of people living in absolute poverty and the importance of maximizing the development impact of CTF particularly in these countries is important.

There is also much potential for CTF investments to bring positive development impacts for women. For example, there may be job opportunities that could be particularly targeted at women. And BRT systems funded by CTF could make travel safer and easier for women if gender analysis is taken into account in the design. Also increased access to electricity in remote areas could result in major improvement in the lives of women. There are real opportunities here but this too will require an explicit gender focus in order to maximize the development co-benefits for women.

Reforming the urban transport sector through introducing BRTs is a major focus of the country plans. Only the Vietnam, Colombia and Mexico plans acknowledge the institutional and political economy barriers to this. This will be one of the major risk areas for BRTs given that there are

likely to be many vested interests in keeping things as they are. A recent World Bank study of reforming the urban bus system in Dhaka, Bangladesh highlights the barriers to reform particularly due to political patronage and corruption. The study was commissioned due to the failure of previous attempts by the Bank to support transport reform due to institutional and political blockages and has important lessons for CTF investments in urban transport.

The CTF plans recognize the importance of safeguards in preventing negative social and environmental consequences of CTF investments. Most plans state that government and MDB social and environmental safeguards will be followed as appropriate. Further, CIF documentation is clear that MDB procedures need to be followed at the project level.

Public consultation and civil society representation in the design and implementation of clean technology projects is also important for maximizing the development co-benefits although there is little reference to this in the CTF investment plans. The Kazakhstan Plan is the only one that states that a consultation process took place during the design of the CTF investment plan. This was organized by EBRD and IFC and involved a web based component and a workshop in 20 organizations, including NGOs, participated. There are also some references to the need for public consultation during the implementation of plan, such as for the proposed Bus Rapid Transit systems in Mexico.

Table 1 presents the full range of co-benefits by CTF-financed technology. This table should be read with reference to Annexes 1 and 2 produced as part of this SEA. Annex 1 on the Environmental, Social and Gender Aspects of Clean Technologies contains references to the broader literature on the development impact of clean technologies, highlighting both co-benefits but also potential negative impacts that need to be avoided. Annex 2 on Approaches and Instruments for Social and Gender Mainstreaming provides guidance on different tools that could be used to help design programs and projects so that social and gender co-benefits can accrue. For example, in terms of targeting low income areas for BRT investments, poverty and social assessments and beneficiary consultation can help to identify low income groups and the needs of such groups, and thus help to design the projects in a more pro-poor way.

**Table 1: Potential Development Co-benefits linked with CTF-financed Technologies**

Technology	Countries (CTF)	Potential Development Co-benefits	Requirements for achieving co-benefits
<b>Bus Rapid Transit/ Urban Transport</b>	<b>Colombia, Egypt, Mexico, Morocco, Philippines, Thailand, Vietnam</b>	<ul style="list-style-type: none"> <li>• Provide low income groups with an affordable and efficient mass transit system</li> <li>• Improve employment opportunities for low income groups through greater access to jobs market.</li> <li>• Improved access to basic services for low income groups.</li> <li>• Urban renewal and economic development in BRT corridors.</li> <li>• Health benefits through reduced pollution.</li> </ul>	<ul style="list-style-type: none"> <li>• Targeting of low income areas</li> <li>• Gender analysis to ensure maximum benefits for women</li> <li>• Affordability</li> <li>• Implementation of safeguards for any resettlement</li> <li>• Stakeholder consultation with residents and civil society</li> </ul>
<b>Wind Energy</b>	<b>Egypt, Kazakhstan, Mexico, Morocco, Philippines, South Africa, Thailand, Turkey, Ukraine</b>	<ul style="list-style-type: none"> <li>• Job creation in maintenance and manufacture of components</li> <li>• Employment in rural areas for off-grid projects</li> <li>• Improved electricity coverage in rural areas.</li> <li>• Local business opportunities using electricity</li> </ul>	<ul style="list-style-type: none"> <li>• Training needed to help local people get employment in renewable energy</li> <li>• Community participation in management of small-scale renewable energy</li> <li>• Implementation of safeguards in relation to any resettlement</li> </ul>
<b>Solar Energy</b>	<b>Mexico, MENA, Philippines, South Africa, Thailand</b>	<ul style="list-style-type: none"> <li>• Job creation in maintenance and manufacture of components</li> <li>• Employment in rural areas for off-grid projects</li> <li>• Improved electricity coverage in rural areas.</li> <li>• Local business opportunities using electricity</li> <li>• Improved health benefits from improved air quality in homes from electric light.</li> </ul>	<ul style="list-style-type: none"> <li>• Training needed to help local people get employment in renewable energy</li> <li>• Community participation in management of small-scale renewable energy</li> <li>• Implementation of safeguards in relation to any resettlement</li> </ul>
<b>Small-scale Hydropower</b>	<b>Philippines, Thailand, Turkey, Ukraine, Vietnam</b>	<ul style="list-style-type: none"> <li>• Job creation in maintenance and manufacture of components</li> <li>• Employment in rural areas for off-grid projects</li> <li>• Improved electricity coverage in rural areas.</li> <li>• Local business opportunities using electricity</li> <li>• Education and health benefits from better electricity coverage</li> <li>• Improved agricultural production from using water from micro-hydro schemes for irrigation.</li> <li>• Improved health benefits from improved air quality in homes from electric light.</li> </ul>	<ul style="list-style-type: none"> <li>• Training needed to help local people get employment in renewable energy</li> <li>• Community participation in management of small-scale renewable energy</li> <li>• Implementation of safeguards in relation to any resettlement</li> </ul>
<b>Biomass</b>	<b>Philippines, Thailand, Turkey, Ukraine</b>	<ul style="list-style-type: none"> <li>• Job creation in maintenance and manufacture of components</li> <li>• Employment in rural areas for off-grid projects</li> <li>• Improved electricity coverage in rural areas.</li> <li>• Local business opportunities using electricity</li> </ul>	<ul style="list-style-type: none"> <li>• Training needed to help local people get employment in renewable energy</li> <li>• Community participation in management of small-scale renewable energy</li> <li>• Implementation of safeguards in relation to any resettlement</li> </ul>

Technology	Countries (CTF)	Potential Development Co-benefits	Requirements for achieving co-benefits
Geothermal	Indonesia, Philippines	<ul style="list-style-type: none"> <li>No direct benefits on local communities since geothermal projects feed into main grid.</li> <li>Indirect benefits from increase energy security</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of safeguards</li> </ul>
Energy Efficiency	Colombia Kazakhstan Indonesia Mexico Morocco Philippines South Africa Turkey Ukraine Vietnam	<ul style="list-style-type: none"> <li>Indirect benefits from governments and individuals spending less on energy.</li> <li>Cutting production costs of key commodities used by poor people (e.g. energy savings in Tortilla industry in Mexico)</li> <li>Improved heating in municipal housing</li> </ul>	<ul style="list-style-type: none"> <li>Targeting industries where energy efficient measures will benefit poor people either through lower prices or creating employment opportunities.</li> <li>Targeting buildings which are predominately occupied by low income groups.</li> </ul>

#### 4.4 Indicators

Our approach to the indicators proposed below in Table 2 has relied on several factors:

- The SEA findings from Chapter 2 suggest that environmental co-benefits tend to be closely correlated with greenhouse gas reduction. This suggests that (in the case of the currently financed clean technologies) it is sufficient to just measure greenhouse gas reductions as a proxy for environmental pollutants (such as particulate matter).
- There is a huge potential for certain social and gender co-benefits from the CTF technologies if projects are designed to maximize these benefits (see section above).
- The CIF is about transformational change. This suggests that the investment plans will lead to sustained institutional changes in a country in terms of its approach to the respective clean technology, rather than for results to be tied only to the life of the CIF project.

In addition, we have focused on indicators which are readily available and measurable, in order to ensure that huge amounts of time and effort are not diverted to setting up new monitoring systems in countries unless absolutely necessary.

As information for the reader, Annexes 4-6 present the background material that was prepared prior to formulating the CTF indicator proposal below. This material ranges from assessing the proposed indicators in versions of the results framework (prior to September 1, 2010) against the possible co-benefits that could arise from projects, as well as reviewing the range of indicators already used by the development community for these clean technologies.

Hence Table 2 proposes seven key indicators (that capture, technology, environmental, social, and gender aspects) and suggests that they be measured at a country level continuously over the CTF lifetime and beyond to assess CTF program impact and outcome. It is also recommended that identification of project level indicators be left to the country and MDB teams with the caveat that project level indicators should feed into the national indicators measured at the level of the results framework.

**Table 2: Potential Indicator “Dashboard” for the CTF**

		Local Environment	"Technical"	Social/Poverty	Gender	Comments
	<b>CTF</b>					
1	Cost per ton of Co2 eq abated	x	x			CO2 emissions provides a good proxy for local environment pollutants in the energy and transport sectors
2	Carbon intensity of energy production (tCO2 eq/MWh)	x	x			This is an important short-term and long-term indicator of transformation outcomes in the energy sector
3	gCO2/passenger km	x	x			This is an important short-term and long-term indicator of transformation outcomes in the transport sector
4	CO2/unit of output- industrial sector	x	x			This is an important short-term and long-term indicator of transformation outcomes in energy efficiency. The industry sector is highlighted as a proxy for energy intense activity
5	% of travellers using BRT (breakdown by gender and income level)		x	x	x	This is an indicator that could be derived through surveys and is typically one that is assessed in urban transport projects
6	% electricity coverage in rural areas		x	x		Rural areas are taken as a proxy for low income areas with poor energy access. This indicator is one that is already measured and reported. A transformation implies an increase in coverage of low carbon electricity sources.
7	Last national energy and major city urban transport plan of country takes into account climate and local environmental issues and is prepared in consultation with a wide range of stakeholders (incl. women/men)	x	x	x	x	This is an indicator which could be measured easily and indicates the extent of "mainstreaming" of env/social/gender issues in sector planning.

## **5 Maximizing Environmental, Social and Gender Co-Benefits in the Pilot Program for Climate Resilience (PPCR)**

### **5.1 Main Findings**

- The PPCR Phase 1 proposals give significant attention to applying participatory approaches in the context of preparing the Phase 1 proposal, but also in terms of their plans to prepare the Strategic Program for Climate Resilience (SPCR). In some Phase 1 proposals, there are good practice proposals for putting in place institutional mechanisms that will continue to foster a dialogue on climate issues beyond the preparation of the SPCR (e.g. NGO dialogue forum in Cambodia or including climate change in the university syllabus in Bolivia). SEA is also often proposed as a key tool to ensure that consultation and analysis is conducted in a structured way during the course of preparation of the SPCR, albeit this often is depicted as a parallel activity rather than as a building block to prepare a participatory and analytically sound SPCR.
- There is seemingly less of an analytical and participatory approach taken in terms of describing in the Phase 1 proposals the identified proposed investment areas (be they territorial or sectoral) and this could be strengthened considerably through the application of selective indicators.
- The challenge of integrating climate resilience in development planning, based on the experience of other programs, is how to ensure there is continuous engagement beyond the preparation of the first national SPCR and the duration of the PPCR program. From other programs, it is clear that the *process* to prepare the first SPCR is therefore crucial in fostering broader stakeholder ownership and continued engagement in the longer term. This suggests that the activities supported by the PPCR program (Phases 1 and 2) need to further emphasize institutional mechanisms that allow for a sustained dialogue on climate adaptation, as well as to use a strong analytical and participatory approach to prepare the SPCR. In that regard, the principles and approaches of an SEA need to be emphasized in preparing the SPCR, rather than the SEA report itself.
- Gender is only effectively integrated in PPCR Phase 1 proposals when there is already existing information in the country from gender assessments. This suggests that a particular emphasis on gender is warranted (applying the tools and approaches that the MDBs already have at their disposal) if it is clear from the country context that women, in particular, could play a key role in shifting behaviors towards greater climate resiliency or if they are disproportionately affected.

### **5.2 Introduction**

The Pilot Program for Climate Resilience (PPCR), approved in November 2008, was the first program under the SCF to become operational. Its objective is to pilot and demonstrate ways to integrate climate risk and resilience into core development planning, while complementing other ongoing activities.

Specifically, the PPCR objectives have been laid out in the PPCR design document (PPCR/SC.1/CRP.1) and are summarized here:

- a) pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning;

- b) strengthen capacities at the national levels to integrate climate resilience into development planning;
- c) scale-up and leverage climate resilient investment, building on other ongoing initiatives;
- d) enable learning-by-doing and sharing of lessons at country, regional and global levels.

In addition, regional PPCR pilots aim to strengthen cooperation and capacity at the regional level to integrate climate resilience into national and appropriate regional development planning and processes.

PPCR program expected outcomes are noted as follows:

- a) improved integration of climate resilience into planning, processes, and implementation (as appropriate to each country);
- b) increased consensus on an approach to climate resilient development appropriate to each country;
- c) increased finance availability (e.g., scaled-up investment commitment) in approaches to climate resilient development;
- d) enhanced learning and knowledge sharing on integration of climate resilience into development, at the country, regional and international levels.

While outcomes (a)–(c) above focus on results in the participating countries, outcome (d) relates to both country level and the overall aim of PPCR at the global program level.

Under the PPCR, two types of investments are supported: (i) funding for technical assistance to enable countries to build upon existing national work to integrate climate resilience into national and sectoral development plans, and (ii) funding for public and private investments identified in national or sectoral development plans or strategies addressing climate resilience.

The nine PPCR pilot countries and two regions were selected on the basis of recommendations prepared by an expert group utilizing vulnerability and risk based approach. Selected countries and regions participate in the PPCR through two distinct phases. In the first, they prepare a Phase 1 proposal to receive a grant of up to \$1.5 million to complete activities under Phase 1 (which typically focus on preparing a SPCR and on carrying out the underlying analysis linked with investments at either a sectoral or territorial level). In a Phase 2, they approach the sub-committee again for additional funding towards implementation of the program and related investments.

### **5.3 Methodology**

At the time of the SEA, only 6 Phase 1 proposals and one fast-track Phase 1 proposal have been submitted and approved by the PPCR Sub-Committee. The approach therefore adopted by the SEA team has been to review these existing Phase 1 proposals (with the exception of the fast-track proposal since it has minimal information) in terms of the descriptions and approaches to integrate environmental, social, poverty and gender considerations in these documents. In order to inform the analysis and draw lessons that may be useful to the PPCR, other programs that have sought to integrate environment, social, gender and poverty approaches in development planning have also been reviewed (see Section 5.5). Based on these inputs, the SEA team has

assessed the strengths of the PPCR process and program, as well as made recommendations to further strengthen the program to enable it to meet specified objectives in PPCR key documents. At the crux of the analysis of the existing Phase 1 proposal is the question: What does taking into account environmental, social, gender aspects mean in the context of integrating climate resilience into development planning and implementation? A second key question is to what extent there is an emphasis on poor and vulnerable groups (not only from a climate risk perspective, but also from a capacity to respond perspective) in determining actions and priority investments under the PPCR?

In that regard, the two quotations below from the programming document of the PPCR provide important responses to both these questions, and hence are a benchmark to assess the Phase 1 proposals:

- “Importantly, the PPCR is designed to catalyze a transformational shift from the “business as usual” sector-by-sector and project-by-project approaches to climate resilience. The PPCR will promote *a participatory approach* [italics added] towards development of a broad-based strategy to achieving climate resilience at the national level in the medium and long-term. The process will involve a broad range of stakeholders from cross-sectoral government departments, non-government actors, including civil society groups and highly affected communities, and the private sector. The PPCR aims for an equal effort from all development partners to cooperate, engage in dialogue, and align behind this strategic approach as a common platform.”
- “The preparation of the *Strategic Program for Climate Resilience* is a key process towards concretizing the main objective of the PPCR to initiate transformation in the approach to development planning, budgeting, and investments so as to include considerations of climate resilience. The Strategic Program should outline the government’s agreed long-term vision to achieve a climate resilient development trajectory and a critical path to get there. This should include consideration of *vulnerable economic sectors, specific social groups (including women, youth, indigenous peoples, and local communities), and ecosystems* [italics added].”

#### **5.4 Results of Analysis**

The summary table in Annex 7 shows the result of the SEA team’s review. Many of these proposals include good practices in terms of responding to PPCR programming guidelines, but also in terms of other elements. The main findings of this review are as follows:

- In most cases, there is significant attention given to applying participatory approaches in the context of preparing the Phase 1 proposals, including the due diligence of the joint mission in meeting and discussing the potential PPCR program with a wide set of stakeholders.
- There is also mention in most cases of the intention to apply a multi-stakeholder participatory approach to the development of the SPCR itself.
- Several proposals note that an SEA will be conducted as part of Phase 1 activities. In some proposals, it is clear that SEA is an important building block that feeds into the preparation of the SPCR by providing a structured analytical and participatory approach to preparing the SPCR. In other proposals, the SEA seems to be a parallel activity and it is not clear how it affects the SPCR itself.



- Several proposals highlight institutional mechanisms to ensure that the dialogue on climate is fostered across a broad cross section of national stakeholders, even beyond the PPCR program itself. These include efforts to set up forums for debate, including climate change in university and/or research syllabi etc.
- The treatment of gender is one aspect that varies widely across different Phase 1 proposals. At one end, best practice approaches which are integrated within a broader national discussion on gender are presented. In a couple of cases, however, there is no mention at all of gender considerations.
- The discussion in Phase 1 proposals as to how particular sectors and/or territorial approaches are chosen for investment also varies widely. Sometimes previous analytical work is referred to, at other times, a justification is presented. Rarely, however, do the proposals discuss the alternatives that were considered in this process of selection. However, once the region/sector is selected, the details are left open and intentions to use a participatory process to develop these are evident.

## **5.5 Lessons Drawn from Other Programs**

It is interesting to compare the approach in the PPCR to several other similar programs that strive to integrate environment and poverty considerations in development planning. In that regard, the UN Poverty-Environment Initiative (PEI) is a targeted effort with this mandate. They operate by advisors working in planning ministries over long periods of time (5-10 years) so that both capacity is built within the ministry, and the process of integration is more broad-based than just integrating aspects in one development plan cycle. The World Bank's CEA program also has as one of its (multiple) objectives to provide information to country governments that could feed into their Poverty Reduction Strategy Papers and Development Plans. In that regard, about 30% of a sample of 16 CEAs (recently reviewed) influenced PRSP recommendations. This model has as its advantages a strong focus on analysis (often to highlight priorities), but has not necessarily helped to systematically build capacity in a country for this type of planning, in part because of the leadership of the Bank in preparing the CEA, rather than country officials. CEAs also appear to be more successful when they are regarded as only an early step in a process, with the need for subsequent follow-up in terms of capacity building, technical assistance and investments. The SEA of the Ghana PRSP is also an interesting example, where a one-off SEA report preparation did influence the Ministry of Planning to apply a similar approach (focused on a structured approach to analysis and participation) in preparing the subsequent PRSP.

These programs all provide the same lessons with respect to success. These are as follows:

- Place emphasis on country leadership and ownership of the process. More advanced work (for example in the PEI and the recent policy-based SEA program) shows that country ownership means broad-based ownership in the country, and not just among a few champions in key ministries, who may be subject to changes/movements.
- The importance of follow-up/sustained engagement, and of aligning incentives, so that there is progress beyond integrating the subject matter only in a single development plan or strategy. This includes building capacity within the country, but also monitoring and reporting on indicators that indicate a shift towards desired behaviors or indicate milestones reached. Transparency and sharing of information with a broad set of stakeholders can also help to promote accountability for action beyond the first development plan.

## 5.6 Implications for PPCR

The PPCR places emphasis on country-led approaches, which is important. It also helps to build capacity in the countries by placing them in the lead to contract analyses and lead the work in integrating climate resilience in development planning. Similarly the emphasis on participatory approaches to encourage more broad based involvement and on also financing investments to ensure some preliminary level of follow-up is best practice.

Based on the review of Phase 1 proposals, the PPCR program could potentially be further enhanced as follows to ensure even more robust PPCR program outcomes:

- (i) Phase 1 and Phase 2 proposals directed at the sub- committee and Phase 1 implementation activities within the country supported by the MDB joint missions that focus on identifying the priority sectors/territories for investment need to apply and disseminate clearly the analytical and participatory process used to select priority investments for financing in a country. Alternatives considered should also be presented. From an analytical standpoint, the use of certain social indicators, such as “percentage population at risk”, as well as “relative income level of the at-risk population and its bearing to the sector/territory chosen”, would help to “demystify” the choices made. (See also PPCR indicator section below.)
- (ii) Phase 1 and Phase 2 proposals directed at the sub- committee and Phase 1 implementation activities within the country supported by the MDB joint missions need to continue to emphasize gender mainstreaming. Since MDB procedures apply at a project level, and these are increasing their focus on gender integration, over a longer time frame, this issue may not need to be highlighted.<sup>2</sup> However, in the short term, gender indicators at the PPCR project and program level may be the most effective way to ensure that gender is appropriately addressed. (See PPCR indicator section below.)
- (iii) The challenge of integrating climate resilience in development planning, based on the experience of other programs, is how to ensure there is continuous engagement beyond the preparation of the first national SPCR and the duration of the PPCR program. From other programs, it is clear that the *process* to prepare the first SPCR is therefore crucial in fostering broader stakeholder ownership and continued engagement in the longer term. This suggests that the activities supported by the PPCR program need to further emphasize institutional mechanisms that allow for a sustained dialogue on climate adaptation, as well as to use a strong consultative and analytical approach to prepare the SPCR. This suggests that programming guidelines and sub- committee reviews of proposals need to emphasize, in line with the emerging best practice in current Phase 1 proposals, (a) support for activities that strengthen the country’s ability to have a broad based dialogue on a sustained basis on climate issues; and (b) the building in of SEA principles and approaches (namely a strong analytical and participatory approach that discusses and analyzes alternatives from the perspective of impacts/effects on people and the environment) in preparing the SPCR itself, rather than a separate or parallel SEA effort (unless the SEA truly feeds into the SPCR as a component block).

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<sup>2</sup> The World Bank, in terms of its own approaches to gender in projects in the urban, energy, water, transport, agriculture, environment and social sectors is in the process of ensuring that by FY14, 100% of projects will carry out a gender analysis to identify gender based constraints, needs and priorities; and if the analysis identify high level gender gaps that can be addressed by the project, gender-responsive actions and gender indicators will be included in the design for monitoring progress. Further the Bank is in the process of establishing indicators for monitoring gender integration.

## 5.7 PPCR Indicators

Our approach to the indicators proposed below in Table 3 has relied on several factors:

- The SEA review findings above suggest that appropriate choice of indicators may be an effective way to draw attention to particular aspects of the PPCR program, including choice of investments, inclusion of institutional mechanisms to allow for a sustained dialogue and gender integration.
- Our focus has been on identifying indicators that are both readily available and measurable, in order to ensure that huge amounts of time and effort are not diverted to setting up new monitoring systems in countries.
- On the other hand, some indicators are extremely useful in providing the country information that it can use to continuously better integrate climate resilience in development planning. Hence, suggesting very few such indicators should help to draw attention to the setting up of appropriate monitoring systems in countries
- Unlike the other CIF programs, there is potentially very wide variation across countries with respect to the approaches employed. Hence we advocate that country level indicators need to be developed by the country and only very few indicators (that could potentially be a “dashboard” for the country-level PPCR program) should be measured in the results framework.

As information for the reader, Annexes 4 and 5 present the background material that was prepared prior to formulating the PPCR indicator proposal below.

**Table 3: Potential Indicator “Dashboard” for the PPCR**

		Local Environment	"Technical"	Social/Poverty	Gender	Comments
	<b>PPCR</b>					
1	Last development plan integrates climate resilience by assessing vulnerable population at risk (including gender dimension) and including measures to better manage and reduce related risk, and is disseminated broadly	x	x	x	x	This indicator, as written may be easier to measure objectively than “Development planning routinely and consistently incorporates resilience as a “normal” way of doing business”
2	National results monitoring and evaluation system includes process to monitor adaptation efforts and related indicators are publically available		x	x		This indicator is easily measurable and is a more robust way of assessing whether development planning truly integrates climate resilience. It also is an institutional indicator that goes beyond the life of the PPCR program if it is combined with public dissemination of the results..
3	Changes in budget allocations to take into account effects of CV and CC across sectors and regions.		x			This indicator is easily measurable and is a more robust way of assessing whether development planning truly integrates climate resilience.  This also implies that PPCR countries may wish to assign budget linked with CV and CC as a particular line item in sector budget to facilitate reporting.

4	Number of lives lost / injuries from extreme climatic events (women/men)		x	x	x	This measures the ultimate outcome of effectively integrating climate resilience into development planning. It also helps decision-makers to decide how the next development plans need to be adjusted to be more effective.
5	Damage / economic losses (\$) from extreme climatic events	x	x	x		This measures the ultimate outcome of effectively integrating climate resilience into development planning. It also helps decision-makers to decide how the next development plans and investments may need to be adjusted to be more effective.
6	Vulnerable population at <i>reduced</i> risk due to PPCR investments as a percentage of total vulnerable population at risk from climate events (as estimated in development plan)		x	x		This indicator provides incentive to apply a more analytical basis to choose investment projects.
7	Level of awareness and knowledge of key issues (CV/CC impacts, etc) by stakeholder group	x	x	x	x	This is an indicator that would need to be measured periodically through use of opinion poll/survey techniques that poll population samples that are representative of the entire population. The results could be presented with many different cuts, including government stakeholders in different ministries separately to assess actual coordination, women/men, different income groups, populations living in high risk/low risk areas, etc. It also responds directly to the desired PPCR outcomes as indicated in the programming guidelines. It also gets to the heart of whether there is a broad dialogue among all stakeholders (and hence awareness) of the implications of climate change.

## **6 Maximizing Environmental, Social and Gender Co-Benefits in the Forest Investment Program (FIP)**

### **6.1 Main Findings**

- The FIP Design and Programming documents highlight the multiple objective nature of the program, in a way that is consistent with REDD plus, i.e. emphasizing not only reduction of emissions from deforestation and forest degradation by addressing underlying drivers, but also contributing to multiple co-benefits such as biodiversity conservation, protection of the rights of indigenous peoples and local communities, poverty reduction and rural livelihoods enhancements. Further, recognizing the forest dependence of indigenous peoples, the FIP has established a dedicated mechanism to provide grants to indigenous peoples and local communities in country or regional pilots to support their participation in the development of the FIP investment strategies, programs and projects.
- The process of choosing and justifying investments in a FIP program will be key. Some thought needs to be given to this process so that all co-benefits can be maximized, particularly since environmental and social co-benefits are highly intertwined with climate related objectives. This could be through a combination of quantitative analysis, coupled with a participatory discussion of the underlying drivers of deforestation and forest degradation and identifying the key interventions that need to be made for progress.
- There is also a real opportunity to establish a common platform to an integrated approach to environmental and social assessment with other similar programs, such as UN-REDD and FCPF, which is in line with current MDB procedures and safeguard requirements.

### **6.2 Introduction**

The FIP supports developing countries' efforts to reduce deforestation and forest degradation (REDD) and promotes sustainable forest management that leads to emission reductions and the protection of carbon reservoirs. It achieves this by providing scaled-up financing to developing countries for readiness reforms and public and private investments, identified through national REDD readiness or equivalent strategies. The FIP takes into account country-led priorities and strategies for the containment of REDD, while building on existing forest or related initiatives. It promotes programmatic investments aimed at transformational change in the forest sector or sectors affecting forests.

### **6.3 Methodology**

Unlike the CTF and the PPCR, the FIP is still at an early stage of implementation. A number of pilot countries have been identified, but are just beginning to embark on the development of country investment programs.

Therefore, our analysis has to be by definition more limited, and has largely relied on the design documents and operational guidelines for the FIP, as well as the emerging experience of other REDD programs. We are using a set of four broad benchmarks to assess to what degree the FIP has integrated environmental, social and gender dimensions into the programming framework. These benchmarks are:

- 1) Explicit environment and socio-economic objectives: Do the key documents include references to co-benefits?
- 2) Focus on vulnerable populations: Are there provisions for targeting marginalized segments of society such as Indigenous Peoples in addition to other stakeholders who may be most affected?
- 3) Consultative processes: How are beneficiaries and other stakeholders involved in the design and management of the program? Is there gender balance among stakeholders?
- 4) Environmental and social assessments or similar approaches: Do the programming frameworks promote methods to capture environmental and social risks and opportunities?

## **6.4 Results of Analysis**

The results of our analysis of FIP key documents is as follows.

### **6.4.1 Environment and socio-economic objectives**

The FIP programming framework acknowledges that its investments not only mainstream climate resilience but also contribute to multiple co-benefits such as biodiversity conservation, protection of the rights of indigenous peoples and local communities, and poverty reduction through rural livelihoods enhancements. In addition, the Design Document underlines the need for equitable benefit-sharing arrangements with local communities.

In addition, the Operational Guidelines stipulate that FIP Investment Strategies “*should identify expected co-benefits from FIP investments, including the contribution to the improvement of local livelihoods, poverty alleviation, and human development of forest dependent communities, including indigenous peoples, as well as, the protection of biodiversity and other ecosystem services; enhance climate resilience, and the promotion of gender equality and social sustainability. A key element will be the description of environmental and social outcomes and benefits of the FIP investments.*”

In this respect, the FIP is very much in sync with the current international debate on REDD+, which has highlighted the need for the development of standards that harness the economic potential of REDD+ for local communities and safeguard against risks. In terms of its overarching objectives, FIP is also aligned with UN-REDD and the FCPF, who have a similar emphasis on co-benefits.

The challenge now is to ensure that these broad principles and goals are translated into criteria and procedures that give these socio-economic benchmarks an operational role in the design and implementation of country investments.

### **6.4.2 Focus on vulnerable populations**

In the context of REDD+, forest-dependent communities are considered to be particularly vulnerable because forest resources are the mainstay of their livelihoods, and REDD+ investments could potentially impact negatively on their use rights and practices. At the same time, if designed properly, REDD+ regimes could serve as vehicles for major revenue flows and other benefits to marginalized populations.

This balance of risks and opportunities is even more relevant for indigenous peoples, who historically have been relegated to “unproductive” forest lands, and today most indigenous territories are found in tropical forests.

The FIP has incorporated this critical issue explicitly in its Design Document and has agreed to establish a dedicated mechanism to provide grants to indigenous peoples and local communities in country or regional pilots to support their participation in the development of the FIP investment strategies, programs and projects. At the implementation stage grants to indigenous peoples and local communities should be an integral component of each pilot program.

While this mechanism is not yet operational, it might prove an important element of ensuring that indigenous peoples and local communities’ interests and concerns will be adequately reflected in program design and implementation.

### **6.4.3 Consultative Processes**

The FIP includes a host of provisions for participatory and consultative processes in its programming framework. This ranges from the governance structure of the FIP Sub-Committee to specific guidelines for consultations with local communities and indigenous peoples in the context of investment strategies and programs. The Design Document notes that “consistent with relevant international instruments, obligations and domestic laws, FIP investment strategies, programs and projects at the country or regional level should be designed and implemented *under a process of public consultation, with full and effective participation of all relevant stakeholders* [italics added] on matters that affect their distinctive rights, including in particular groups that historically have tended to be marginalized such as indigenous peoples, local communities and women.”

There are additional stipulations with regard to the development of investment strategies which should be “inclusive, transparent and participatory, involving: sectoral ministries; provincial, state or local authorities; development partners working in the country, including UN and bilateral development agencies; *representative NGOs, indigenous peoples organizations, women’s groups and local communities; private sector; and other stakeholders* [italics added].”

Last but not least, the Forest Investment Program also offers guidelines for consultation with indigenous peoples and local communities (see Annex 3 of the FIP Design Document). It is worth noting that these guidelines are cognizant of indigenous concerns by stressing that consultations “recognize their own existing processes, organizations and institutions, including, inter alia, councils of elders, headmen, and tribal leaders, as well as indigenous peoples organizations and institutions; ensure broad community participation; and pay special attention to women, youth, and the elderly.”

### **6.4.4 Assessments**

There is no explicit mention in the FIP documents about the need or desirability to assess social, environment and gender risks and opportunities in a structured manner. The only exception is a reference to stakeholder assessments which should accompany investment strategies as an annex.

In that regard, the experience to-date of the FCPF and of the PPCR is useful. The FCPF is currently considering how tools for better mainstreaming environmental and social approaches (such as those described in Section 3) can be integrated into the process itself of preparing a Readiness Package, as well as meet safeguard requirements without duplicating the process by carrying out a parallel Strategic Environmental and Social Assessment. Similarly, as discussed in Section 5, in the PPCR, an important consideration is how to best integrate participatory and analytical approaches in the process itself of preparing an SPCR (including of assessing and evaluating alternative paths and investments), and thus ensure that if an SEA is carried out, it is a building block of the SPCR, rather than conducted as a parallel activity. It is important to note that since MDB safeguard policies apply, explaining how the SEA is being conducted within a broader process (of preparing a strategy/program/choosing investments) and documented to show that all safeguard requirements are being met will also be important. Hence collaboration and cooperation (as has already been requested by the respective governing bodies) across the FIP, UN-REDD and FCPF on further elaborating a common platform to integrated environmental and social assessment approaches will be important.

### **6.5 Selecting Investments for the Country FIP Program**

The FIP's focus is on selecting and supporting investments and the design document lists multiple criteria for selection of investments. Objectively using these criteria to compare alternative investment choices however is not easy. As is already evident from the review of the PPCR in this SEA, choice of investments is a key process. In the PPCR, indicators (such as % population that is vulnerable due to climate risk) have been recommended as a mechanism to help make more objective investment choices. This is much more difficult for the FIP as it is often not possible to determine the extent of deforestation or degradation attributable to any particular driver. In addition, as is recognized by the FIP Design Document, involvement of a range of stakeholders is key to the process. This should not only help to maximize co-benefits, but also help to build constituencies for change and promote accountability for action among the different groups of stakeholders that prioritize the same investments.

A possible approach to selecting FIP investments that is worth consideration is that which has recently been used in policy SEAs (see for example, *West Africa Mineral Sector Strategic Assessment*, WAMSSA, Report No. 53738-AFR, World Bank, 2010, Annex 4 pp 187-212). This involves an iterative process of analysis and consultation, initially with homogeneous stakeholder groups, to identify and choose priorities. Care needs to be taken to ensure that powerful vested interest groups are not combined in the same consultation meeting to ensure equal representation of views. Hence carrying out a stakeholder analysis is key at the start of the process. In this process, it is the stakeholders who eventually "choose" the priorities as it is the common priorities across all the different stakeholder groups that emerge at the top. Such a process can be further strengthened by sharing information and building capacity of the different stakeholder groups prior to this process (as was the case in Las Bambas, Peru, see Box 3.5, pg. 73 in *Policy SEA: Conceptual Model and Operational Guidance for Applying Strategic Environmental Assessment in Sector Reform*, Report No. 55328, World Bank, 2010) and potentially the fund for indigenous peoples and communities could be an important vehicle for this purpose. However, it is important to note that the capacity building effort does not need to sequentially precede the process for choosing priority investments, and can occur in parallel and capacity building is typically a long-term and continuous process.



## 6.6 Indicators

The development of the logic model and results framework for the FIP are not yet complete but the Design Document calls, *inter alia*, for a “demonstrable improvement in social and economic well-being of forest dependent communities, including poverty reduction, equitable benefit sharing, and acknowledgement of the rights and role of indigenous peoples and local communities.” Moreover, the Document calls for the Results Framework to be differentiated by gender when appropriate.

Our approach to the indicators proposed below in Table 4 has relied on several factors:

- The proposal strives to capture the full range of sought-after co-benefits, but yet recognizes that some co-benefits are inherently captured when forests are conserved and/or sustainably managed (e.g. biodiversity co-benefits)
- The current understanding of REDD plus suggests that some drivers of deforestation and forest degradation are particularly key and need to be tackled to ensure future progress (e.g. land rights/ownership). We have tried to draw attention to these through choice of indicators.
- Our focus has been on identifying indicators that are both readily available and measurable, in order to ensure that huge amounts of time and effort are not diverted to setting up new monitoring systems in countries.
- There is potentially wide variation across countries with respect to the approaches employed. Hence we advocate that country level indicators need to be developed by the country and only very few indicators (that could potentially be a “dashboard” for the country-level FIP program) should be measured in the results framework.

As information for the reader, Annexes 4 and 5 present the additional background material that was prepared prior to formulating the FIP indicator proposal below.

**Table 4: Potential Indicator “Dashboard” for the FIP**

	FIP	Local Environment	"Technical"	Social/Poverty	Gender	Comments
1	Percentage (%) change in hectares of forest cover	x	x			This is ultimate country level outcome being sought through FIP investment.
2	Percentage (%) change in hectares of forest that are degraded	x	x			This is ultimate country level outcome being sought through FIP investment.
3	Percentage (%) change in high conservation value forests (HCVF) areas	x	x			This indicator highlights the biodiversity co-benefits being sought at a country level.
4	% of communities/households with clear titles over forest land / clear rights		x	x		Poor land titling/rights are a major underlying cause for deforestation/forest degradation. This indicator highlights the importance of addressing this issue.
5	Hectare (ha) of forest complying with agreed land use (land use planning)					Expansion of the agriculture frontier (cattle ranches and biofuel production, in particular) is a key driver of deforestation. This assumes that land use planning is being used.

6	Level of community participation in land use planning, forest management, and monitoring		x	x		Stakeholder participation is highlighted in FIP documentation as a key aspect, and this qualitative indicator attempts to measure that.
7	Percentage (%) income change and employment (women and men) in rural areas		x	x	x	Ultimately incomes have to improve of forest dependent communities so that they apply sustainable forest management practices or shift to other income generating sources.
8	Evidence of coordinated approach between ministries/departments to address cross-sectoral forest-related policy, planning, or practice issues		x			Forest management requires a cross sectoral approach at the government level to be successful. This indicator highlights this aspect, albeit qualitatively.
9	Hectares (ha) of forest areas covered by certification schemes		x			This is an indicator of level of sustainable forest management.
10	Level of illegal logging (change as % of annual allowable cut)	x	x			This is an indicator for assessing a shift towards sustainable forest management.
11	Forest/land area cleared for biofuel production	x		x		See Chapter 8 for an explanation of this indicator

## **7 Maximizing Environmental, Social and Gender Co-Benefits in the Scaling-up Renewable Energy in Low Income Countries (SREP)**

### **7.1 Main Findings**

- SREP documentation is at an early stage. The Design Document makes reference to co-benefits, such as reduced local pollution, increased energy security, enterprise creation, and increased social capital, particularly greater involvement and empowerment of women and other vulnerable groups.
- The literature review (from Chapter 1) shows clearly that there is potentially more opportunity for certain social co-benefits such as increased employment, particularly for women, linked with small-scale renewable energy services. This suggests that the SREP Operational Guideline needs to highlight these aspects and ask for appropriate analysis and a gender-sensitive consultative approach in the development of the SREP investment plan.
- Chapter 1's literature review indicates that in the case of most renewable energy applications (with the exception of household level interventions which are excluded from the SREP Design Document), the project needs to be designed in a pro-poor way if social and gender co-benefits are to be maximized, as these do not occur automatically. This suggests again that SREP Operational Guideline needs to specify that the SREP Investment Plan clearly explain how social co-benefits, in particular, will be realized and/or maximized as investments are developed.

### **7.2 Results of Analysis**

The aim of the SCF Program for Scaling-up Renewable Energy in Low Income Countries (SREP) is to pilot and demonstrate, as a response to the challenges of climate change, the economic, social and environmental viability of low carbon development pathways in the energy sector by creating new economic opportunities and increasing energy access through the use of renewable energy. The SREP Design Document also notes that “SREP should also lead to economic, social and environmental co-benefits. Using renewable energy in place of conventional fuels could simultaneously address local air pollution reductions while reducing greenhouse gas emissions, contributing to climate resilience, and enhancing energy security.”

From the environmental, social and gender perspectives, the SREP design principles include the following elements:

- “Give priority to renewable energy investments that create “value added” in local economies. SREP should target proven renewable energy technologies that allow for the generation and productive use of energy, as well as community services such as health, education and communication”
- “Seek wider economic, social and environmental co-benefits, such as reduced local pollution, increased energy security, enterprise creation, and increased social capital, particularly greater involvement and empowerment of women and other vulnerable groups”
- “Be designed and implemented with the full and effective participation and involvement of, and with respect for the rights of, indigenous peoples and local communities, building on existing mechanisms for collaboration and consultation”

The Design Document also includes the following among the operational criteria that should be used to prioritize and select activities to be funded by SREP:

- “Economic, social and environmental development impact. Project and program proposals for SREP financing should demonstrate the generation of economic, social and environmental benefits.”

In order to meet the specified objectives and principles in the SREP Design Document, it is important to consider the findings of the literature review in Chapter 1 and related Annex 1. These suggest that gender aspects are fundamental to achieve the technological shift in the case of certain household-level renewable energy services, such as those for cooking. However, it is important to note that these are not included in the SREP program, which emphasizes generation and productive use of energy, as well as community services.<sup>3</sup> From a women’s employment perspective, it is also clear that small scale renewable energy service products offer considerably more opportunities for employment than grid-connected renewable applications. This suggests that the forthcoming SREP Operational Guideline needs to highlight these aspects and ask for appropriate analysis and a gender-sensitive consultative approach in the development of the SREP investment plan, if renewable energy services are featured in a key way.

Another important finding of the literature review in Chapter 1 is that environmental, social, and gender co-benefits all automatically accrue in the case of certain renewable energy services (such as solar lights, cleaner energy technologies for cooking). For other renewable energy applications, the project would need to be designed in a pro-poor way if there is a decision to maximize social and gender co-benefits, as these do not occur automatically. Since the SREP is not funding household level interventions, this suggests again that forthcoming SREP Operational Guideline needs to specify that the SREP Investment Plan clearly explain how social co-benefits, in particular, will be realized and/or maximized as investments are developed (for example, through a particular focus on targeting rural electrification to very low-income communities or community-focused consultation to better understand the barriers to an acceleration of provision of renewable energy services).

### **7.3 Indicators**

Our approach to the indicators proposed below in Table 5 has relied on several factors:

- The SEA findings from Chapter 1 suggest that environmental co-benefits tend to be closely correlated with greenhouse gas reduction. This suggests that (in the case of the currently financed clean technologies) it is sufficient to just measure greenhouse gas reductions as a proxy for environmental pollutants (such as particulate matter).
- There is a huge potential for certain social and gender co-benefits from the SREP technologies if investment plans include considerations of poverty reduction (see section above).
- The SREP is about transformational change. This suggests that the investment plans will lead to sustained private sector take-up and institutional changes in a country in terms of its approach to the respective clean technology.

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<sup>3</sup> There is no explicit mention of excluding households in the Design Document. This is based on discussions with Ms. Patricia Bliss-Guest (Program Manager, CIF), who indicated that this topic was discussed extensively at the SREP design phase and agreement was reached by the sub-committee that household level interventions would not be funded under the SREP (conversation on October 19, 2010).

In addition, we have focused on indicators which are readily available and measurable, in order to ensure that huge amounts of time and effort are not diverted to setting up new monitoring systems in countries unless absolutely necessary.

As information for the reader, Annexes 4, 5 and 6 present the background material that was prepared prior to formulating the SREP indicator proposal below. This material ranges from assessing the proposed indicators in versions of the results framework (prior to September 1, 2010) against the possible co-benefits that could arise from projects, as well as reviewing the range of indicators already used by the development community for these renewable energy technologies.

**Table 5: Potential Indicator “Dashboard” for the SREP**

		Local Environment	"Technical"	Social/Poverty	Gender	Comments
	<b>SREP</b>					
1	Cost per ton of Co2 eq abated	x	x			CO2 emissions provides a good proxy for local environment pollutants in the renewable energy sector
2	% share of energy services from low carbon sources	x	x			This is an important short-term and long-term indicator of transformation outcomes in the renewable energy sector
3	%of RE/total energy generation	x	x			This is an important short-term and long-term indicator of transformation outcomes in the renewable energy sector
4	% of RE investment of total energy sector investment		x			This is an important short-term and long-term indicator of transformation outcomes in RE
5	% of total energy sector employment working in RE (women/men)		x	x	x	
6	Cost of RE \$/mJ compared to cost of FF \$/mJ		x			This is an important short-term and long-term indicator of transformation outcomes in RE

## 8 Mal-adaptation at the Level of the Overall CIF Program

### 8.1 Main Findings

- From a topic or issues standpoint, there appears to be a potential for mal-adaptation linked with biofuel production and the reduction of deforestation and forest degradation under the FIP. This is because in many instances forest clearance is due to expanding the agricultural frontier.
- This suggests that including indicators on *forest/land area cleared for biofuel production* in the FIP results framework could be an important monitoring tool. It will also be important to monitor and report on this indicator in the context of progress reports within the CTF and SREP programs, particularly in countries with a FIP program or significant forest resources.

### 8.2 Introduction

This analysis focuses on assessing whether any of the CIF programs could adversely affect accomplishment of other CIF programs' objectives (i.e. if there is a potential for mal-adaptation). The information to make this assessment has primarily been carried out through a review of Annex 1. It is therefore a preliminary assessment, and indicative of how mal-adaptation could be approached in the CIF. The assessment should also be repeated again as more information is available about all the investments that would be financed under all the CIF programs. Suggestions on how to better monitor and manage this potential risk through the Results Framework are also made below.

### 8.3 Results of Analysis

Annex 1 clearly indicates that from a topic or issues standpoint, there appears to be a potential for mal-adaptation linked with biofuel production under the CTF and SREP and the reduction of deforestation and forest degradation under the FIP. This is because in many instances forest clearance is due to clearing of land for competing purposes, such as biofuel production. A quick review (as of October 1, 2010) of the pilot countries under each CIF program reveals that there are only three countries that are participating in more than one CIF program. These are as follows: Nepal is participating in the SREP and PPCR programs, and Mexico and Indonesia are both participating in the CTF and the FIP. A review of the Mexico and Indonesia CTF Investment plans indicate that there is emphasis on bus rapid transit and energy efficiency (in the case of Mexico) and geothermal and energy efficiency (in the case of Indonesia). Biofuels do not appear to be on the table for CTF investment. However, an increase in biofuel production could potentially be an indirect result of shifting to cleaner energy technologies (beyond those financed directly by the CTF) in both these countries as they do rely currently on bio-fuel use. This suggests that including indicators on *forest/land cleared for biofuel production* in the FIP results framework for these two countries could be an important monitoring tool over time. It will also be important to monitor and report on this indicator in the context of progress reports within the CTF program in these countries, but also in other countries which have significant forest resources. Since the SREP could potentially finance biofuel production, monitoring this indicator in countries with significant forest resources will also be important.

## Annex 1: The environmental, social and gender aspects linked to clean technologies to be financed under the CIFs

CIF-funded intervention	Technology	Local environmental effects	Social effects	Gender effects
<b>General</b>			<p>The provision of energy for poor people can help to achieve the MDGs through a number of both direct and indirect roles. DFID's report 'Energy for the Poor' summarized the major benefits as follows<sup>4</sup>:</p> <p><i>To halve extreme poverty</i> - access to energy services facilitates economic development - micro-enterprise, livelihood activities beyond daylight hours, locally owned businesses, which will create employment - and assists in bridging the 'digital divide'.</p> <p><i>To reduce hunger and improve access to safe drinking water</i> - energy services can improve access to pumped drinking water clean water and cooked food reducing hunger (95% of food needs cooking).</p> <p><i>To reduce child and maternal mortality, and to reduce diseases</i> – energy is a key component of a functioning health system, for example, operating theatres, refrigeration of vaccines and other medicines, lighting, sterile equipment and transport to health clinics.</p> <p><i>Environmental sustainability</i> – improved energy services help to reduce emissions, protecting the local and global environment; efficient use of energy sources and good management can help to achieve sustainable use of natural resources and reduce deforestation.</p> <p>However while the access to affordable energy is critical for achieving the MDGs, this needs specific policy interventions that target poor people as increasing the availability of energy at a national level will not necessarily benefit poor people unless they are targeted. In a review of the relationship between poverty and energy in Latin America and the Caribbean, a UN report found that in the national development plans, poverty reduction strategies and energy plans and strategies of a large number of countries the relationship between energy and poverty is hardly mentioned. If MDGs are to be attained, the energy policy of States much give priority to the goal of providing access to energy services for the poor, at prices they can afford.<sup>5</sup></p> <p>Experiences of power sector reform shows that though many developing countries have introduced extensive power sector reforms many of these reforms have failed to provide poor people with affordable energy. Poverty reduction cannot be achieved by energy</p>	<p>Access to better energy services can improve women's social, economic and political life, by reducing the time and effort within domestic work, enhancing health and educational conditions, expanding income-generating opportunities, and facilitating their participation in public affairs. Furthermore energy programmes and policies will be more effective, when they are gender-sensitive, by ensuring that the needs and concerns of both men and women are taken into account.</p> <p><i>To promote gender equality and empowerment of women and to achieve universal primary education.</i><sup>9</sup> Energy services reduce the time spent by women and children (especially girls) on basic survival activities (gathering firewood, fetching water, cooking, etc.), increases their educational and employment possibilities and allows them to participate in community (and political) affairs. Lighting permits home study, increases security and enables the use of educational media and communications in schools (including information and communication technologies, ICTs).</p> <p><i>To achieve Environmental sustainability</i> - in their traditional roles as managers of environmental resources (wood, biomass fuel supplies, etc.), women affect the sustainability of land and natural resources.</p> <p>Men and women are affected differently by energy policies as soon as their home, work and community roles are different.</p> <p>Gender blind policies may reinforce gender inequalities.</p> <p>The international network on gender and sustainable energy (ENERGIA) identified some recommendations to promote</p>

<sup>4</sup> DFID 2002, p 1

<sup>5</sup> UN ECLAC 2009, p17

<sup>9</sup> DFID, 2002.

			<p>access alone but needs targeted interventions. A report by the Global Network on Energy for Sustainable Development identified some of the key criteria for pro-poor power sector reform which have important lessons for renewable energy:</p> <ul style="list-style-type: none"> <li>• Governments need to have an explicit focus on the poor. Market led power sector reforms have failed to address the needs of the poor and this failure is largely the result of a policy vacuum. Pro-poor policies are needed which include targeted funding, designing tariffs and connection charges that are affordable for poor people, and also promoting economic opportunities for communities through access to electricity.<sup>6</sup></li> <li>• Rural electrification funds need to be protected from misappropriation and misdirection. Countries which have 'ring-fenced' funds for rural communities have achieved much higher rates of coverage. This requires transparent project selection processes, stringent monitoring of fund disbursement and detailed standards and guidelines that ensure low costs.<sup>7</sup></li> <li>• Participation of local communities in power sector reform can significantly improve poor people's use of energy through ensuring that programme design is pro-poor and appropriate to the local context, improving community awareness of new technologies and overcoming perceived barriers, and developing economic opportunities.<sup>8</sup></li> </ul>	<p>gender-sensitive energy policies, such as<sup>10</sup></p> <ul style="list-style-type: none"> <li>• Focusing on expanding energy services for the poorest citizens – women and men— that reach beyond urban and industrial markets and support wider development goals,</li> <li>• Collect and use gender-disaggregated data in defining issues, examining and selecting policy alternatives, implementing policies, and evaluating results</li> </ul>
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<sup>6</sup> GNESD p8

<sup>7</sup> GNESD p11

<sup>8</sup> GNESD p 17, DFID p11

<sup>10</sup> ([http://www.energia.org/fileadmin/files/media/factsheets/factsheet\\_policies.pdf](http://www.energia.org/fileadmin/files/media/factsheets/factsheet_policies.pdf))



<p style="text-align: center;"><b>Urban transport</b></p>	<p style="text-align: center;"><b>1. Bus Rapid Transit System</b></p>	<p>The implementation of the TransMilenio Bus Rapid Transit (BRT) system in the City of Bogota, Columbia has improved air quality (40% reduction in air emissions in the 1<sup>st</sup> 12 months of operation).  <sup>11</sup> The following reductions have been reported: SO<sub>2</sub> decline by 43%; NO<sub>x</sub> by 18%; particulate matter by 12%.<sup>12</sup></p>	<p>Due to TransMilenio BRT, city traffic fatalities have fallen by 92%, injuries by 75%, and collisions by 79% in Bogota. The number of robberies has also fallen, by 47%.<sup>13</sup></p> <p>With the TransMilenio BRT system's implementation, there has been a 32% reduction in overall travel time in corridors where the TransMilenio system operates. Post-BRT Bogota has recorded an increase in throughput by 60%.<sup>14</sup></p> <p>Curitiba, Brazil, has the highest rate of public transport ridership in Brazil (45%) and the lowest congestion-related economic losses due to innovative transport planning, urban planning, and city management.<sup>15</sup></p> <p>The main social benefits of BRT can be reducing journey times, cutting transport costs and improving employment opportunities. The Curitiba BRT in Brazil and Bogota BRT in Colombia are much cited examples of successful BRTs.<sup>16</sup></p> <p>In order to maximize the social benefits following measures needed: stakeholder consultation and analysis at planning stage; locating BRT routes to maximize coverage for poor urban areas and targeting poor people; integrating BRT and land use planning to promote economic development around stations.<sup>17</sup></p> <p>It is important to understand the political economy obstacles to reforming urban transport and introducing BRTs. This includes breaking political patronage systems that support existing urban transports and which would oppose the introduction of more efficient, equitable BRTs.<sup>18</sup></p> <p>In the field of transport, motorized traffic may induce congestion, noise and accidents.<sup>19</sup> BRT system can reduce the congestion, noise and accidents.</p>	<p>As women are usually the last to have access to modern and expensive forms of transport, they walk because there is no other option. Urban transport needs to be responsive to female and male customer's needs.</p> <p>Addressing Gender in urban transportation measures has the following benefits:<sup>20</sup></p> <ul style="list-style-type: none"> <li>• It increases economic rates of return on investment in infrastructure and increasing the profitability of mass transport systems</li> <li>• It meets demand for transportation services through a better understanding of the divergent needs, preferences and constraints of end users, both women and men</li> <li>• It lowers transaction costs by optimizing the transport system for all users</li> <li>• It increases access to employment, education and services that ultimately raise productivity and</li> <li>• It enables women to better meet the needs of the household, for which they have primary responsibility and ultimately strengthens the base economic unit of the household.</li> </ul>
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<sup>11</sup> ESMAP. 2009. [http://www.esmap.org/filez/pubs/2122010124215\\_Bogota\\_Case\\_Study\\_020310.pdf](http://www.esmap.org/filez/pubs/2122010124215_Bogota_Case_Study_020310.pdf). (Accessed on April 29, 2010). See also, Ardila, Arturo and Menckhoff, Gerhard. 2002.

"Transportation Policies in Bogotá: Building a Transportation System for the People". Transportation Research Record. No. 1817, pp. 130-136.

<sup>12</sup> ESMAP. 2009. [http://www.esmap.org/filez/pubs/2122010124215\\_Bogota\\_Case\\_Study\\_020310.pdf](http://www.esmap.org/filez/pubs/2122010124215_Bogota_Case_Study_020310.pdf). (Accessed on April 29, 2010). See also, Ardila, Arturo and Menckhoff, Gerhard. 2002.

"Transportation Policies in Bogotá: Building a Transportation System for the People". Transportation Research Record. No. 1817, pp. 130-136.

<sup>13</sup> ESMAP. 2009. [http://www.esmap.org/filez/pubs/2122010124215\\_Bogota\\_Case\\_Study\\_020310.pdf](http://www.esmap.org/filez/pubs/2122010124215_Bogota_Case_Study_020310.pdf). (Accessed on April 29, 2010)

<sup>14</sup> ESMAP. 2009. [http://www.esmap.org/filez/pubs/2122010124215\\_Bogota\\_Case\\_Study\\_020310.pdf](http://www.esmap.org/filez/pubs/2122010124215_Bogota_Case_Study_020310.pdf). (Accessed on April 29, 2010). See also, Ardila, Arturo and Menckhoff, Gerhard. 2002.

"Transportation Policies in Bogotá: Building a Transportation System for the People". Transportation Research Record. No. 1817, pp. 130-136.

<sup>15</sup> World Bank. News and Broadcast. June 26, 2009. Sustainable Urbanization – Economically and Ecologically - Is Focus of New Program. <http://go.worldbank.org/5M8SYBHQ20> (Accessed on April 29, 2010).

<sup>16</sup> ESMAP Good Practices in City Energy Bogota, Colombia – BRT for Urban Transport 2009m p 4-5

<sup>17</sup> GTZ 2004, p24

<sup>18</sup> World Bank 2009c, p. 4ff

<sup>19</sup> Kahn Ribeiro, S. et al. 2007. IPCC WG III. Ch 5. Page 378

<sup>20</sup> <http://www2.gtzt.de/dokumente/bib/07-1025.pdf>

Urban transport	2. Metro			Surveys, taken in Santiago de Chile show that almost 30% of the women's income went into travelling to and from work every week despite using the bus and not the more expensive METRO. No women reported using the Metro. It is essential to take into consideration the different transport needs, travel behaviors and levels of access of men and women. <sup>21</sup>
Urban Transport	3. Light Rail			
Urban Transport	4. Fuel switching	<p>Switching to compressed natural gas (CNG) from other fossil fuel sources reduces air pollution. CNG-fueled vehicles emit no lead and produce fewer NO<sub>x</sub>, CO, and HC emissions than gasoline-fueled vehicles.<sup>22</sup></p> <p>Controlled tests conducted by AQIRP on catalyst-equipped light-duty vehicles (U.S. 1992 and 1993 models) showed that toxic air pollutant emissions were dramatically lower with CNG; formaldehyde emissions were reduced by 50 percent and acetaldehyde emissions by 80 percent for CNG vehicles compared to their gasoline counterparts. Benzene and 1, 3 butadiene are virtually nonexistent in CNG exhaust.<sup>23</sup></p> <p>Diesel-derived lean-burn natural gas engines for use in emissions-critical applications such as urban transit buses and delivery trucks are capable of achieving very low level of NO<sub>x</sub>, and particulate matter (less than 2.0 g/bhp-hr NO<sub>x</sub> and 0.03 g/bhp-hr PM) with high efficiency, high power output, and long life.<sup>24</sup></p> <p>In the shipping industry, a switch from diesel to natural gas also reduces emissions of SO<sub>x</sub> and</p>		

<sup>21</sup> <http://www2.gtz.de/dokumente/bib/07-1025.pdf>

<sup>22</sup> Faiz, Weaver and Walsh 1996. Box 5.4. Page 196

<sup>23</sup> AQIRP 1995. Cited in Faiz, Weaver and Walsh 1996. Page 197

<sup>24</sup> Faiz, Weaver and Walsh 1996. Page 197

		NOx that contribute to local air pollution in the vicinity of ports. <sup>25</sup>		
<b>Urban Transport</b>	<b>5. Biofuels</b>	<p>In the case of ethanol combustion as a fuel in place of gasoline, carbon monoxide emissions tend to be lower as are hydrocarbon emissions. Aldehyde emissions are significantly higher, though, and this may cause a significant problem as many are carcinogens and irritants.</p> <p>In the case of ethanol from sugarcane, the burning of sugar cane residues on plantations may cause concern, particularly if they are located near urban areas. Stillage from distilleries may also result in increased water pollution unless treated.<sup>26</sup></p>	<p>Biofuels are seen as a controversial issue in many countries with a number of negative social impacts of biofuels. They have been held partially responsible for the increase in food prices resulting in lower food consumption for many poor people and exacerbating food insecurity.<sup>27</sup> Furthermore, in some places they have affected rural people's access to land as companies compete for land for biofuels production.<sup>28</sup> This can also apply over competition for water as some biofuel technologies require high water inputs. Concerns have also been raised over violation of labor rights for plantation workers<sup>29</sup></p> <p>However, biofuels can present opportunities for poor people through providing income generation opportunities as out growers and employment. Pro-poor policies and regulation are necessary for achieving this to protect food security for poor people.<sup>30</sup></p>	

<sup>25</sup> Kahn Ribeiro, S. et al. 2007. IPCC WG III. Ch 5. Page 357

<sup>26</sup> Ahmed, K. 1994. Page 15.

<sup>27</sup> Von Braun, 2008, p 5, Oxfam 2008, p19

<sup>28</sup> Oxfam 2008, p 21

<sup>29</sup> Oxfam 2008, 24

<sup>30</sup> Oxfam 2008, 25

<p><b>Renewable energy resources development</b></p>	<p><b>6. Geothermal energy project</b></p>	<p>Geothermal infrastructure development operations will modify the surface morphology of the area and could damage local plants and wildlife.<sup>31</sup> Blow-outs can pollute surface water. During drilling or flow-tests undesirable gases may be discharged into the atmosphere. The scenic view will be modified.<sup>32</sup></p> <p>Geothermal fluids (steam or hot water) contain gases such as carbon dioxide, hydrogen sulphide, ammonia, methane, and trace amounts of other gases, as well as dissolved chemicals whose concentrations usually increase with temperature and which are a source of pollution if discharged into the environment. The waste waters from geothermal plants also have a higher temperature than the environment and therefore constitute a potential thermal pollutant.<sup>33</sup></p> <p>Hydrogen sulphide is one of the main air pollutants in terms of odor during electricity generation.<sup>34</sup></p> <p>Extraction of large quantities of fluids from geothermal reservoirs may give rise to subsidence phenomena, i.e. a gradual sinking of the land surface. This is an irreversible phenomenon, but by no means catastrophic, as it is a slow process distributed over vast areas. The noise associated with operating geothermal plants could be a problem where the plant in question generates electricity.<sup>35</sup></p> <p>The North East Olkaria Power Development Project in Kenya identified that, geothermal</p>	<p>Geothermal projects may lead to resettlement. During the implementation of the Leyte-Cebu Geothermal Project in the Philippines, 106 households were affected by the geothermal project activities in Leyte, and the resettlement program was successfully implemented, with about half of the affected households transferred to the newly constructed relocation site.<sup>39</sup></p>	<p>If resettlement is required, this may adversely affect women. Lack of landownership and property rights denies women equal access to compensation. In most projects, compensation, Resettlement, and rehabilitation are based on legal ownership of land and property. In many societies, women may not have legal rights to land and property, even though they may have enjoyed usufructory rights or been dependent on them. Hence, they are not eligible for compensation and other benefits that may be available<sup>40</sup> among groups affected by displacement "...indigenous peoples, the elderly and women--have been found to be more vulnerable to impoverishment. This pattern has been observed in indigenous (tribal) areas in India, Peru, Papua New Guinea, Australia, the western United States, Canada, and northeastern Brazil". Also, Pandey (1998; quoted in Koenig 2001: 38) notes that "older people and women, who often had jobs in old sites but not in new, became dependent on the few other family members who did get jobs post-resettlement". As a result, displacement often leads to the disempowerment and material impoverishment of women. Koenig (1995: 22-27, 2001: 54) observes that "those interested in the effects of gender on the ability to benefit from development projects have suggested that women have not benefited from development in the same ways as men, even losing ground in some cases"<sup>41</sup>.</p>
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<sup>31</sup> Dickson and Fanelli 2004. Page 54

<sup>32</sup> Dickson and Fanelli 2004. Page 54

<sup>33</sup> Dickson and Fanelli 2004. Page 55

<sup>34</sup> Dickson and Fanelli 2004. Page 55

<sup>35</sup> Dickson and Fanelli 2004. Page 56

<sup>39</sup> World Bank. 2000. Implementation Completion Report. Philippine Leyte-Cebu Geothermal Project. Page 7.

<sup>40</sup> ADB, Gender Checklist for Resettlement.

1.1.1.1.1.1 <sup>41</sup> Koenig, Dolores 1995, Women and Resettlement. In The Women and International Development Annual, Vol. 4. Edited by Rita S. Gallin, Anne Ferguson and Janice Harper. Boulder: Westview Press, pp. 21-49.

		<p>construction affects local flora, through removal and destruction of vegetation in areas to be cleared for roads, buildings, sump ponds and other structures.<sup>36</sup> In terms of fauna, the main areas of concern are the loss of habitat from a variety of causes, the potentially toxic effect of brine if used for drinking water, the death of animals through road accidents and the conflicts caused by the presence of human settlements and activity within the project area.<sup>37</sup> The potential for soil erosion by water from geothermal power plant is found to be high in the North East Olkaria. However, if appropriate and timely erosion control techniques are used, impacts can be kept to a minimum and acceptable level.<sup>38</sup></p>		
		<p>A mere 2-3 °C increase in the temperature of a body of water as a result of discharging the waste water from a geothermal energy utilization plant could damage its ecosystem. The plant and animal organisms that are most sensitive to temperature variations could gradually disappear, leaving a fish species without its food source. An increase in water temperature could impair development of the eggs of other fish species. If these fish are edible and provide the necessary support for a community of fishermen, then their disappearance could be critical for the community at large.<sup>42</sup></p>		

<sup>36</sup> Environmental Assessment. Executive Summary. North East Olkaria Power Development Project. Kenya. 1993. Page 13.

<sup>37</sup> World Bank. 1993. Environmental Assessment. Executive Summary. North East Olkaria Power Development Project. Kenya. Page 13

<sup>38</sup> World Bank. 1993. Environmental Assessment. Executive Summary. North East Olkaria Power Development Project. Kenya. Page 13

<sup>42</sup> Dickson and Fanelli 2004. Page 53-54

Renewable energy resources development	7. Wind power project	<p>The operation of onshore wind turbines may result in collisions of birds and bats with wind turbine rotor blades and / or towers, potentially causing bird and bat mortality or injury. Potential indirect impacts to birds may include changes in quantity and type of prey species resulting from habitat modification at the wind farm project site, and changes in the type and number of perching and nesting sites due to either natural habitat modification or the use of wind turbines by birds.<sup>43</sup></p> <p>Based on the project on the Design and Manufacture of Small-scale Wind Turbines for Water Pumping and Electrification in rural Egypt, electricity generation through wind power avoids the use of kerosene or traditional lighting sources, resulting in better indoor air quality.<sup>44</sup></p>	<p>In South Africa, partnerships are being developed between private sector and communities to ensure that local communities in the areas where wind farms are situated benefit through access to energy and setting up community trust funds to support local community projects.<sup>45</sup></p> <p>The impact of noise levels from wind farms on local communities also needs to be considered in the siting of wind farms.</p> <p>Based on the project on the Design and Manufacture of Small-scale Wind Turbines for Water Pumping and Electrification in rural Egypt, electricity generation through wind power avoids the use of kerosene or traditional lighting sources, resulting in better indoor air quality, which leads to improved respiratory health.<sup>46</sup></p>	
			<p>Due to the project on the Design and Manufacture of Small-scale Wind Turbines for Water Pumping and Electrification in rural Egypt, two Bedouin tribes in Neweibaa, Aquaba Gulf benefit from the wind powered electricity.<sup>47</sup></p> <p>The project on the Design and Manufacture of Small-scale Wind Turbines for Water Pumping and Electrification in rural Egypt was implemented by the Egyptian Solar Energy Society (ESES), an NGO, and the design concepts and technical information were made available on the website. ESES also worked closely with a major Egyptian manufacturing company in the production process, so this company is now better prepared to produce similar wind energy equipments in future. This project shows how an NGO can help introduce new technology that is designed to meet development need.<sup>48</sup> Thus, wind power projects can provide opportunities to new employment and access to new markets for local manufacture companies.</p>	

<sup>43</sup> NWCC (1999) cited in World Bank Group/IFC, Environmental, Health and Safety Guidelines for Wind Energy (2007), p. 3  
[http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui\\_EHSGuidelines2007\\_WindEnergy/\\$FILE/Final+-+Wind+Energy.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui_EHSGuidelines2007_WindEnergy/$FILE/Final+-+Wind+Energy.pdf) (accessed on June 8, 2010)

<sup>44</sup> Ebrahimian, E. 2003. Page 33

<sup>45</sup> For example, Just Energy, [www.just-energy.org](http://www.just-energy.org)

<sup>46</sup> Ebrahimian, E. 2003. Page 33

<sup>47</sup> Ebrahimian, E. 2003. Page 33

<sup>48</sup> Ebrahimian, E. 2003. Page 33-34

<p><b>Renewable energy resources development</b></p>	<p><b>8. Small hydropower project</b></p>		<p>The UNDP assessment of the development impact of micro hydropower in Nepal found the following<sup>49</sup>:</p> <p>MDG 1. Household income is 26% higher and agricultural income is 64 %greater in communities with electricity due to a number of factors including cheaper energy, use of MHS water for irrigation and the opportunities to participate in new productive activities that have been created due to electrification.</p> <p>MDG 2. A 200% increase in the number of teachers as communities with electricity better able to attract and retain teachers. Communities with electricity show greater educational attainment.</p> <p>MDG 3. Girl's educational attainment is higher in communities with electricity</p> <p>Time savings for women are substantial.</p> <p>MDG 4, 5&amp;6. Communities with electricity have better access to health services due to being able to attract and retain health workers. Communities with electricity have access to better sanitation.</p> <p>MDG 7. Communities with MHS electricity use less kerosene and batteries and less GHG emissions.</p> <p>MDG 8. Communities with electricity have better access to information and communication technologies as prerequisite for mobile phone, computers etc.</p> <p>A study on the social impact of MHS in Peru also found that the installation of MHS generated significant improvements in the livelihoods of people covered by these schemes. Most of the people survey considered that their family incomes had improved with the installation of MHS. There were also significant benefits in health care through lighting for health centres and power for equipment.<sup>50</sup></p> <p>The Rural Energy Development Programme (REDP), initiated in 1996 in Nepal, provides access to electricity in the steep terrain in Nepal where settlement patterns are scattered and where expansion of the national grid is deterred due the hilly areas.<sup>51</sup> REDP stresses community mobilization, bottom-up participatory planning and decentralized decision-making.<sup>52</sup> At least 10 private sector companies produce and install micro hydro systems on a commercial basis, and local bodies, such as municipalities, village and district development committees, NGOs and community based organisations, are also involved in micro hydro projects for rural development.<sup>53</sup></p>	<p>REDP project was designed to be gender responsive.</p> <p>Under REDP, equity and empowerment of both men and women from every target household are ensured through the establishment of separate male and female community organizations.<sup>56</sup></p> <p>The equal opportunities offered have had a visible and positive impact in mobilizing women and integrating them into mainstream activities. The women in community organizations have a distinct voice in local affairs and their self-confidence has increased, as has their capability for independent and collective action. Almost 700 women have taken in-country study tours conducted by the programme. It was the first time most of them had travelled outside of their villages. Attitudes towards women are also changing due to the programme. For example, two out of the five micro hydro schemes in a remote district in far western Nepal (an area where women have the lowest social status) are chaired by women, and a woman has been accepted as the leader of a mixed group of men and women involved in a nursery project in remote Achham.<sup>57</sup></p>
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<sup>49</sup> UNDP 2010, p40

<sup>50</sup> Cockburn,2005 p32

<sup>51</sup> UNDP 2001. Page 72

<sup>52</sup> UNDP 2001. Page 71

<sup>53</sup> UNDP 2001. Page 72

<sup>56</sup> UNDP 2001. Page 71

<sup>57</sup> UNDP 2001. Page 74

			<p>The livelihoods of the women and their families have vastly improved as a result of the income-generating activities undertaken. Attitudes towards women are also changing due to the programme. For example, two out of the five micro hydro schemes in a remote district in far western Nepal (an area where women have the lowest social status) are chaired by women, and a woman has been accepted as the leader of a mixed group of men and women involved in a nursery project in remote Achham.<sup>54</sup> Thus small hydro projects can be designed in socially responsive ways.</p> <p>Productive income generating activities are targeted under REDP as the intended end uses of the energy supplied, and skills training is provided to promote agricultural and home-based businesses.<sup>55</sup> Thus, small hydro projects can be a vehicle for new employment and skill-building opportunities in other relevant sectors.</p>	
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<sup>54</sup> UNDP 2001. Page 74

<sup>55</sup> UNDP 2001. Page 71



<p><b>Renewable energy resources development</b></p>	<p><b>9. Concentrated solar power or solar thermal power plants</b></p>	<p>From an environmental viewpoint, solar-thermal technologies are benign. There are no emissions to the atmosphere.<sup>58</sup></p> <p>There is a water requirement, since areas of high insolation are usually dry.<sup>59</sup> However, that problem can be minimized by using recycling systems, such as those commonly used in thermal power plants.<sup>60</sup></p>	<p>Most CSPs are currently in deserts with very low population densities and the risk of displacing people from productive land is fairly minimal. One square kilometer of land is enough to generate as much as 100-130 gigawatt hours of solar electricity per year, equivalent to the annual output of a 50 MW coal or gas power plant.<sup>61</sup> However if CSPs expands into semi-arid areas which are used for pastoralism or even agriculture then the issue of competing land use will need to be examined. Some CSP technologies require less land although with reduced efficiency and may be more appropriate where there are competing land use requirements.<sup>62</sup></p>	
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<sup>58</sup> Ahmed, K. et al. 2005. Page 32

<sup>59</sup> U.S. Congress 1992; unpublished IFC data. Cited in Ahmed, K. et al. 2005. Page 32

<sup>60</sup> Ahmed, K. et al. 2005. Page 32

<sup>61</sup> Greenpeace, ESTIA, Solar Paces 2005, p8

<sup>62</sup> Greenpeace, ESTIA, Solar Paces 2005, p15

Renewable energy resources development	10. Solar photo-voltaic	<p>Under the Uganda Photovoltaic Pilot Project for Rural Electrification (UPPPRE), started in 1998, switching from use of wood fuel, kerosene and paraffin to solar photovoltaic systems helped reduce deforestation. The shift from kerosene and paraffin lanterns to solar lanterns also helps to improve the quality of indoor air.<sup>63</sup></p> <p>The Rural Energy Development Programme (REDP), initiated in 1996 in Nepal, provides support for conserving and maintaining the environment through various interventions such as solar photovoltaics. Thus far, 704 solar systems have been installed by the programme. The technologies introduced help conserve the environment.<sup>64</sup></p>	<p>UPPPRE project provided trainings and allowed people to acquire new skills. Technicians, trained under UPPPRE, have had an opportunity to participate in private sector delivery of PV electrification. Under the project, the participants were trained in design improvement, and the trainees participated in management and company improvement training at Uganda Management Institute in Nakawa.<sup>65</sup> Under UPPPRE, women and men who bought solar PV systems have reported improved living conditions. The benefits of solar PV include: provision of energy for equipment that could improve on the quality and effectiveness of work done for purposes of income generation (e.g., refrigeration and battery charging); reduced drudgery while performing daily tasks; improved health conditions; greater opportunities for income generation; and greater conservation of natural resources.<sup>66</sup></p>	<p>UPPPRE Project staff made an effort to involve female electricians, installers and researchers in the design process, and to encourage training of women entrepreneurs and technicians, although women were viewed primarily as users rather than manufacturers or distributors of the solar equipment. Emphasis was placed on women in order to address their roles, needs, rights and responsibilities, and to address discrimination against them as project actors and beneficiaries.<sup>67</sup></p> <p>Under the project, three female and 30 male technicians were trained in design improvement, and four women and 20 men participated in management and company improvement training.<sup>68</sup></p> <p>Development opportunities can come through training local people in maintenance of solar power systems..For example, the DFID-funded Orissa Tribal Empowerment and Livelihoods Programme (OTELP), is providing training in solar power technology to village women. These women are now the “barefoot” solar engineers who have put their skills to use, introducing electric lighting to the village and providing a green 12 volt energy supply.<sup>69</sup></p>
		<p>Under UPPPRE, concerns were raised about the current use of disposable dry cell batteries because they contaminate soil and water sources and thus affect local health conditions. The project made arrangements to establish mechanisms for recycling lead acid batteries used in connection with solar systems, which can cause heavy metal poisoning.<sup>70</sup></p> <p>Solar cells are made from silicon and silicon dust</p>	<p>Under the Senegal Rural Area Energy Efficient Lighting Program, solar electrification is provided to rural households as well as to primary schools and local health clinics. Access to electricity results in a significant improvement in the living conditions in the communities through reduction in indoor pollution; increase in safety by reducing the incidence of theft and night aggressions; reduction on the pressure on fire wood used for lightning etc. One of its most significant impacts has been on improving the health conditions of both women and children in the households. Women also reported that access to lighting has increased their time for socialization and social networking in the</p>	<p>Under the Senegal Rural Area Energy Efficient Lighting Program, solar electrification is provided to rural households. Women reported that access to lighting has increased their time for socialization and social networking in the evenings.<sup>77</sup></p>

<sup>63</sup> UNDP 2001. Page 90

<sup>64</sup> UNDP 2001. Page 74

<sup>65</sup> UNDP 2001. Page 90

<sup>66</sup> UNDP 2001. Page 90

<sup>67</sup> UNDP 2001. Page 88

<sup>68</sup> UNDP 2001. Page 90

<sup>69</sup>DFID <http://www.dfid.gov.uk/Media-Room/Case-Studies/2009/India-meenakshi/>

<sup>70</sup> UNDP 2001. Page 90

<sup>77</sup> World Bank. 2009b. Page 27-28.

	<p>is an important occupational hazard at the manufacturing stage, but its risk can be minimized with careful handling.<sup>71</sup></p> <p>Solar cell are also made from certain heavy metals, such as gallium arsenide, cadmium telluride, and copper indium diselenide. These heavy metals pose occupational risks and a hazard to the public if the solar photovoltaic arrays are consumed by fire. Arsenic, a constituent of gallium arsenide solar cells, is very poisonous.<sup>72</sup></p> <p>Hydrogen selenide, used as a feedstock in copper indium diselenide thin-cell manufacture, is an extremely toxic gas. If documented safety procedures are followed, it can be used safely.<sup>73</sup></p> <p>After manufacture, sealed modules of copper indium diselenide contain small amount of selenium between the glass layers. This Selenium could threaten groundwater if modules are disposed of improperly.<sup>74</sup></p> <p>Cadmium is another toxin, which is both poisonous and a possible carcinogen. Both at the manufacturing stage and at the disposal stage, health and safety issues and environmental concerns must be addressed, as the technology matures, for cadmium telluride solar cells. However, the quantities are small relative to the amounts of cadmium waste from disposal of nickel-cadmium batteries and the cadmium entering the food stream from phosphate fertilizers.<sup>75</sup></p>	<p>evenings.<sup>76</sup></p>	
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<sup>71</sup> Holdren, Morris, and Mintzer 1980. Cited in Ahmed, K. 1994. Page 63

<sup>72</sup> Holdren, Morris, and Mintzer 1980; Zweibel and Barnett 1993; and U.S. DOE 1991. Cited in Ahmed, K. 1994. Page 63-64

<sup>73</sup> Ahmed, K. 1994. Page 64

<sup>74</sup> Zweibel and Barnett 1993. Cited in Ahmed, K. 1994. Page 64

<sup>75</sup> Ahmed, K. 1994. Page 64

<sup>76</sup> World Bank. 2009b. Page 27-28.

<p><b>Renewable energy resources development</b></p>	<p><b>11. Landfill gas capture and use system</b></p>	<p>The potential to generate revenue through the sale and transfer of emission reduction credit provides an incentive and means to improve the design and operation of the landfill and to develop a better overall waste management system<sup>78</sup>, which improves environmental quality.</p> <p>With most LFG management, there is a very significant benefit in reducing the emissions of volatile organic compounds, as they are both GHG contributors and toxic gas emissions. There are typically slight increases in NO<sub>x</sub> and SO<sub>x</sub> emissions from LFG management projects but the overall air quality benefits far exceed the implications of these minor increases.<sup>79</sup></p>	<p>Waste pickers may lose their job due to a LFG capture/use project, since they rely on the landfill as a direct source of income. LFG management project can include a provision to organize waste pickers such that they can recover material from the waste prior to it being landfilled.<sup>80</sup></p> <p>Waste pickers are exposed to occupational hazards due to the presence of potentially flammable and/or explosive LFG. LFG management project can improve occupational safety by including a provision to organize waste pickers such that they can recover material from the waste prior to it being landfilled.<sup>81</sup></p>	<p>“Waste pickers and collectors constitute the bottom layer of waste recycling in the metropolis of Delhi and mostly women and children.” Most lost their livelihoods with landfill projects.”<sup>82</sup></p>
<p><b>Renewable energy resources development</b></p>	<p><b>12. Biomass cogeneration for industrial application</b></p>	<p>Biomass, in general, has a far lower sulfur content than coal. Thus, acid deposition from sulfur dioxide emissions on combustion is significantly lower than for coal.<sup>83</sup></p> <p>The NO<sub>x</sub> emissions of biomass are higher than those of coal, and this may be something to consider in terms of their effect on the atmosphere.<sup>84</sup> Biomass power plants also have far higher particulate emissions than conventional coal-fired plants.<sup>85</sup></p>		

<sup>78</sup> The World Bank – ESMAP. 2004. Page 20

<sup>79</sup> The World Bank – ESMAP. 2004. Page 83

<sup>80</sup> Johannessen 1999. The World Bank – ESMAP. 2004. Page 142-143

<sup>81</sup> Johannessen 1999. The World Bank – ESMAP. 2004. Page 142-143

<sup>82</sup> Yujiro Hayami, A. Dikshit, S. Mishra, 2003, FASID, Discussion Paper on International Development, Tokyo

<sup>83</sup> Ahmed, K. 1994. Page 14

<sup>84</sup> Ahmed, K. 1994. Page 14

<sup>85</sup> Terrado 1985. Cited in Ahmed, K. 1994. Page 14

<p><b>Renewable energy resources development</b></p>	<p><b>13. Improved cook stove</b></p>	<p>Evidence shows that rural people themselves perceive that fuelwood is fast disappearing from their local environment.<sup>86</sup> The NCAER study reveals, people are increasingly turning to logs instead of relying on twigs to meet their fuelwood needs. Log consumption to meet rural energy needs has almost doubled over the past two decades, while twig consumption has declined. Thus, concerns about land degradation are very real and valid.<sup>87</sup> The Rural Energy Development Programme (REDP), initiated in 1996 in Nepal, provides support for conserving and maintaining the environment through various interventions such as improved cook-stoves. Thus far, 3,440 improved cook stoves have been installed by the programme that help conserve the environment.<sup>88</sup> Improved cook stoves could reduce the pressure on local forestry, land degradation and environment, as they require less fuel.</p> <p>A number of studies report that the indoor air pollution levels in homes using traditional stoves far exceeds levels recommended by the World Health Organization.<sup>89</sup> Exposure to respirable suspended particles is especially high during cooking in badly ventilated kitchens. A study involving 5,028 households in Tamil Nadu, India found that the respirable dust concentration levels were as high as 2,000 micrograms per cubic meter and improved cook stove can reduce the level of IAP significantly.</p> <p>Barnes and Sen 2004. Page 43</p>	<p>Under the Rural Energy Development Programme (REDP), initiated in 1996 in Nepal, 3,440 improved cook stoves have been installed. The technology introduced increased productivity and reduced drudgery for the men, women and children targeted by the programme.<sup>91</sup></p> <p>An improved cook stove programme in India showed substantial health benefits in reducing lower respiratory infection in children, chronic obstructive pulmonary disease and ischaemic heart disease. Through a reduction in house-smoke<sup>92</sup>.</p> <p>Studies across various developing countries have documented that women who cook on an indoor open fire using biofuels suffer from chronic obstructive pulmonary diseases.<sup>93</sup> Some recent research indicates that the biofuel use has been found to have a dire impact on women and children's health because they are exposed for a long duration to the smoke emanating from the traditional stoves while the women cook.<sup>94</sup> Epidemiological studies have begun to document various kinds of chronic lung diseases including cancer, eye problems, and other illnesses from smoke inhalation and exposure.<sup>95</sup> Researchers have found a high incidence of acute respiratory infection (ARI), chronic obstructive pulmonary disease (COPD), chronic bronchitis, and damage to the eyes among women in such households.<sup>96</sup> Some studies indicate that there is a 50 percent greater chance of stillborn births for women cooking on traditional stoves.<sup>97</sup> The smoke carries many pollutants ranging from carbon monoxide to suspended particulate matter that can be extremely damaging to one's lungs over the long run. Traditional stoves have been found to be extremely polluting in this respect.<sup>98</sup> Because most improved chulhas also have a chimney, at least theoretically the exposure to cooking smoke also was reduced for the households that used them.<sup>99</sup> The use of appropriate stove technologies with chimneys can possibly reduce their harmful effect.<sup>100</sup></p>	<p>With well-maintained improved chulhas or cook stoves, women need only a third of the time they used to spend to collect fuelwood.<sup>101</sup> Time saved can be used for human development, social networking and economic opportunities.</p> <p>Sixty percent of the adult deaths due to chronic lung disease and lung cancer from solid fuel use occurs in women in developing countries.<sup>102</sup> A shift to improved cook stoves can reduce the mortality rate due to solid fuel use among women by reducing the amount of fuel use for cooking, as women are the primary users of solid fuel for cooking.</p> <p>The work of collecting fuel is arduous at best and improved cook stoves definitely seem to cut down on the amount of drudgery women suffer from collecting bio fuel.<sup>103</sup></p> <p>The improved cook stove projects can be designed in a gender-responsive way by including awareness raising and motivation providing components for women. For example, women were extensively consulted under the Tezulután program for improved cook stoves (1999 – 2005) in Guatemala for identifying appropriate cook stoves models. Under the South Asia Energy Sector Assistance Program (1999–2012) in Nepal, women are encouraged to become stove promoters or builders.<sup>104</sup></p>
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<sup>90</sup> Parikh and Laxmi 2000. Cited in Barnes and Sen 2004. Page 43

<sup>91</sup> UNDP 2001. Page 74

<sup>92</sup> Wilkinson, P. et al 1925

<sup>93</sup> Ostro, Aranda, and Eskeland 1995; Parikh and Laxmi 2000; Smith 1987, 1998; Smith and Mehta 2000; NFHS 1995. Cited in Barnes and Sen 2004. Page 10.

<sup>94</sup> Agarwal and others 1999; Mavalankar 1991; Smith 1987, 1993; Smith and Mehta 2000. Cited in Barnes and Sen 2004. Page 32

<sup>95</sup> Mishra and others 1997; Smith 1987. Cited in Barnes and Sen 2004. Page 32

<sup>96</sup> Smith 1987; Parikh and Laxmi 2000; Shailaja 2000. Cited in Barnes and Sen 2004. Page 43

<sup>97</sup> Mavalankar 1991. Cited in Barnes and Sen 2004. Page 43

<sup>98</sup> Barnes and Sen 2004. Page 34

<sup>99</sup> Barnes and Sen 2004. Executive Summary. Page 4

<sup>100</sup> Barnes and Sen 2004. Page 32

<sup>101</sup> Barnes and Sen 2004. Page 34-35

<sup>102</sup> WHO-UNDP. 2009. Executive Summary. Page 2.

<sup>103</sup> Barnes and Sen 2004. Page 35

<sup>104</sup> ESMAP. Draft Final Report: October 2009. Page 54. Table 5.1.

Renewable energy resources development	14. Solar water heater	A large scale institutional level (school, community center, hospital, etc.) solar water heater project in Côte d'Ivoire shows that for each 200 liters of water heated using solar energy, 50 kg of firewood is saved in comparison to heating water over a "3-stone" fire, and 16 kg of firewood is saved compare to improved stove. Reducing dependence upon firewood in rural areas would lift the pressure off from the local forests and ecosystems, which could result in local environmental improvements. <sup>105</sup>	Under the solar water heater project in Côte d'Ivoire, a cooperative of 30 previously unemployed young people was formed and was trained to produce solar water heaters adapted for local use. The project helps young people learn to trade their technical skills and increases their opportunities to generate income. After they complete their training, the members of this cooperative are expected to form their own micro-enterprises and train other apprentices. <sup>106</sup> Thus, solar water heater projects can build new skills, generate employment opportunities and empower the trained people to create more jobs.  Sanitary conditions are improved due to the access to hot water using solar water heater in urban areas, where electric water heaters in health centers and schools are often in need of repair, and in rural areas where only a limited amount of firewood is available. <sup>107</sup>	
Renewable energy resources development	15. Solar cookers	Based on a study of indoor air pollution in Andhra Pradesh, India, women cooks in rural India are exposed to high levels of pollutants harmful to their health on a daily basis. The findings show that exposure levels for the wood and mixed fuel (e.g. mix of dung, straw, and wood) users range from about 400 to 700 µg/m <sup>3</sup> of air, whereas the US EPA recommended exposure level is below 50 µg/m <sup>3</sup> of air. <sup>108</sup> Switching to solar cooking reduces the level of indoor air pollution.  Under Sol de Vida project in Costa Rica, those	Smoke inhalation is one of the main causes of death due to respiratory complications following fires. <sup>110</sup> Indoor smoke from solid fuels causes an estimated 1.6 million deaths annually and accounts for 2.7 percent of the global burden of disease. <sup>111</sup> Studies across various developing countries have documented that women who cook on an indoor open fire using biofuels suffer from chronic obstructive pulmonary diseases. <sup>112</sup> Studies in Nicaragua have recently shown that acute respiratory infections (ARIs), in many cases linked to fuel wood smoke exposure, are the second leading cause of death among infants, after diarrhea. Respiratory illnesses associated with IAP are also one of the main burdens of disease treated by the public health system: The cost of treating ARIs directly caused by fuel wood smoke reaches a	Traditionally one of the primary responsibilities of women is cooking. Sol de Vida project targeted women who are the primary user of cook stoves to achieve the targeted technology shift.  Rural households have changed their traditional three-stone fires for energy-efficient stoves. About two million people in Uganda have been provided with efficient cooking energy. An impact study showed that 200,000 tons of wood were saved in 2006. Women spend less on average for cooking and collecting firewood. <sup>118</sup> Sol de Vida project engaged women in personal

<sup>105</sup> Ebrahimian 2003. Page 4

<sup>106</sup> Ebrahimian 2003. Page 3

<sup>107</sup> Ebrahimian 2003. Page 4

<sup>108</sup> World Bank. 2002. Cited Barnes and Sen 2004. Page 33

<sup>110</sup> Dantzker and Scharf 2000; Restrepo and others 1983. Cited in Ahmed, K. et al. 2005. Page 11.

<sup>111</sup> Ahmed, K. et al. 2005. Executive Summary. Page xiii

<sup>112</sup> Ostro, Aranda, and Eskeland 1995; Parikh and Laxmi 2000; Smith 1987, 1998; Smith and Mehta 2000; NFHS 1995. Cited in Barnes and Sen 2004. Page 10.

<sup>118</sup> <http://www.gtz.de/en/themen/umwelt-infrastruktur/energie/13898.htm>

		<p>who have switched to solar cooking have reduced their use of wood from local forests.<sup>109</sup></p>	<p>conservative minimum estimate of US\$4 million annually in Nicaragua.<sup>113</sup> In the Guatemalan highlands, it is calculated that for children under age five living in homes in which open fires are used for heating and cooking, there are about 24,000 cases of ALRI and 1000 deaths from ALRI annually that would be eliminated if indoor PM<sub>10</sub> levels were reduced to less than 200 µg/m<sup>3</sup>.<sup>114</sup> Technology shift from solid fuel to solar cooking system avoids the environmental health risks of indoor air pollution all together.</p> <p>Costa Rica's Sol de Vida Solar Cooking project is led almost completely by women,<sup>115</sup> providing valuable leadership and management skill-building opportunities. The project engaged women in personal development in ways that are difficult to achieve otherwise. The project builds social as well as individual capacity by developing local groups and encouraging women to work together on other projects not related to cooking. For example, some of the groups now raise awareness about domestic violence and help women in this situation.<sup>116</sup> Women benefit from educational components of the construction workshops.<sup>117</sup></p>	<p>development in ways that are difficult to achieve otherwise. A critical element that enables women to take advantage of the time saved is the fact that the project builds social as well as individual capacity by developing local groups and encouraging women to work together on other projects not related to cooking. For example, some of the groups now raise awareness about domestic violence and help women in this situation.<sup>119</sup></p> <p>Women benefit from educational components of the construction workshops for Sol de Vida project,<sup>120</sup> as they help women acquire new skills.</p> <p>Sixty percent of the adult deaths due to chronic lung disease and lung cancer from solid fuel use occur in women in developing countries.<sup>121</sup> A shift to solar cooker can reduce the mortality due to solid fuel use among women by eliminating solid fuel use for cooking, as women are the primary users of solid fuel for cooking.</p>
<b>Energy efficiency</b>	<b>16. Energy efficiency through demand side</b>	<p>Energy efficiency measures will reduce local and regional air pollution (IPCC 2007).<sup>122</sup></p>	<p>Energy efficiency measures will not only limit demand and improve energy security, but enhance economic competitiveness, and generate employment (IPCC 2007).<sup>123</sup></p>	

<sup>109</sup> Ebrahimian, E. 2003. Page 115

<sup>113</sup> Ahmed, K. et al. 2005. Page 11

<sup>114</sup> Ahmed, K. et al. 2005. Page 41

<sup>115</sup> Ebrahimian, E. 2003. Page 116

<sup>116</sup> Ebrahimian, E. 2003. Page 115

<sup>117</sup> Ebrahimian, E. 2003. Page 115

<sup>119</sup> Ebrahimian, E. 2003. Page 115

<sup>120</sup> Ebrahimian, E. 2003. Page 115

<sup>121</sup> WHO-UNDP. 2009. Executive Summary. Page 2.

<sup>122</sup> GEF. Investing in Energy Efficiency: The GEF Experience. Forward. Page 5. <http://www.thegef.org/gef/sites/thegef.org/files/publication/Investing-Energy-Efficiency-English.pdf> (Accessed on May 3, 2010)

<sup>123</sup> GEF. Investing in Energy Efficiency: The GEF Experience. Forward. Page 5. <http://www.thegef.org/gef/sites/thegef.org/files/publication/Investing-Energy-Efficiency-English.pdf> (Accessed on May 3, 2010)

	<b>management</b>		In terms of demand-side management (DSM), GEF projects rely on the financial, organizational, and technical strengths of local utility companies to deliver small-scale energy efficiency investments in the utility, building, and municipal sectors. <sup>124</sup> Thus, local capacity is enhanced as a result of the project activities.	
<b>Energy efficiency</b>	<b>17. Energy efficient lighting and appliances</b>	Energy efficiency measures will reduce local and regional air pollution (IPCC 2007). <sup>125</sup>	Energy efficient lighting and appliances can provide the skill-building opportunities in the local manufacturing sector. For example, the Efficient Use of Energy project in Egypt provided training for young people in maintaining and installing energy efficient lighting equipment that has been the major capacity development activity. The young people trained as technicians gain skills that help them find employment in an area where unemployment is widespread. <sup>126</sup> GEF invests in energy efficiency projects by implementing its barrier-removal strategy and promotes replication that encourages market transformation using the strategy. To sustain such transformation, all GEF EE projects strive to develop local capacity, disseminate best practices, and build public awareness. <sup>127</sup>	
<b>Energy efficiency</b>	<b>18. Energy conservation in the industry sector</b>	Energy efficiency measures will reduce local and regional air pollution (IPCC 2007). <sup>128</sup> Improving the efficiency of energy use by industries may result in local air quality and environmental improvement. <sup>129</sup>	Based on the appraisal of the Integrated Safeguards Datasheet for the thermal power efficiency project in China, closure of inefficient small coal-fired units may lead to negative social impacts on unemployment of plant workers in some of the cases. Data from the Social Economic Survey conducted in 2007, covering 15 small power companies including 13 plants in Shandong and Shanxi provinces, indicated that, on average, about 2.38 worker might be laid off for each MW closed. Additional financial support would be needed to ensure closure of the small units on schedule and satisfactory settlement of the affected workers. <sup>130</sup>	
			If legalized, EE in the industry sector could provide young engineers with new source of employment, since industries of a certain size would be required to employ an EE specialist. <sup>131</sup>	

<sup>124</sup> GEF. Investing in Energy Efficiency: The GEF Experience. Forward. Page 11. <http://www.thegef.org/gef/sites/thegef.org/files/publication/Investing-Energy-Efficiency-English.pdf> (Accessed on May 3, 2010)

<sup>125</sup> GEF. Investing in Energy Efficiency: The GEF Experience. Forward. Page 5. <http://www.thegef.org/gef/sites/thegef.org/files/publication/Investing-Energy-Efficiency-English.pdf> (Accessed on May 3, 2010)

<sup>126</sup> Ebrahimian, E. 2003. Page 31

<sup>127</sup> GEF. Investing in Energy Efficiency: The GEF Experience. Forward. Page 7. <http://www.thegef.org/gef/sites/thegef.org/files/publication/Investing-Energy-Efficiency-English.pdf> (Accessed on May 3, 2010)

<sup>128</sup> GEF. Investing in Energy Efficiency: The GEF Experience. Forward. Page 5. <http://www.thegef.org/gef/sites/thegef.org/files/publication/Investing-Energy-Efficiency-English.pdf> (Accessed on May 3, 2010)

<sup>129</sup> Ebrahimian, E. 2003. Page 37

<sup>130</sup> World Bank. 2009. Integrated Safeguards Data Sheet. Appraisal Stage. GEF China Thermal Power Efficiency Project

<sup>131</sup> Ebrahimian, E. 2003. Page 37



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## Annex 2: Approaches and Instruments for Social and Gender Mainstreaming

Instruments	Description	Benefits	Constraints	Good Practice	Key References
<b>ANALYSIS</b>					
<b>Social and gender Cost-Benefit Analysis</b>	Form of economic analysis that incorporates positive and negative externalities into project and policy analysis. Unlike traditional CBA, blends quantitative and qualitative data, and focuses on broader societal objectives such as employment, savings and income distribution. Separate out data for women and men; and analyze gender based benefits and costs.	Broadens economic analysis to capture wider cost of policy and project interventions Incorporates market failures and other imperfections	Expert-driven, top-down approach Primarily economic instrument that does not incorporate political and institutional factors		Stewart, F. & Streeten, P. (1972). Little-Mirrlees Methods and Project Appraisal. <i>Oxford Bulletin of Economics and Statistics</i> , Department of Economics, University of Oxford, vol. 34(1), pages 75-91. Coady, D.P. (2000). <i>The Application of Social Cost-Benefit Analysis to the Evaluation of Progresa</i> . International Food Policy Research Institute (IFPRI).DC.
<b>Gender Responsive Social Analysis</b>	Gender analysis is part of good social analysis, and is undertaken within the social and/or beneficiary assessment process. It can be conducted using a mixed method of qualitative and quantitative analyses.	It provides a 'gendered' perspective of project feasibility (gender based constraints, risks and opportunities); relationship between individuals, organizational arrangements and institutional structure – especially the power relationships, conflict and agency of both public and private arena, and draw attention to equity and inclusion; identify target groups (poor female headed households) and gender based needs; understanding gender specific roles, responsibilities, time-use patterns and social norms that can improve project planning and avoid potential	Requires gender specialists with sector knowledge.	A pilot project, <i>Opportunities for Women in Renewable Energy Technology in Bangladesh (ESMAP 2004)</i> , conducted a gender analysis and incorporated needs in the project design. The project trained poor rural women to manufacture solar systems and provide modern energy services in remote coastal areas. The lessons was taken into large Rural Electrification and Renewable Energy Project (RERED), and nearly 500,000 households are using SHS, and thousands of women are employed as service provider, technicians, engineers (World Bank 2010, Making Infrastructure Work for Women and Men)	Gender Responsive Social Analysis: A Guidance Note (2005), Social Development Department, World Bank

		problems; held evaluation of gender-specific project outcomes and impacts.			
<b>Gender-responsive Beneficiary Assessment</b>	Beneficiary Assessment (BA) is a qualitative research tool used to improve the impact of development operations by gaining the views of intended beneficiaries regarding a planned or ongoing intervention. The objective of BA is to assess the value of an activity as perceived by project beneficiaries and to integrate findings into project activities. It is designed specifically to undertake systematic listening of the poor and other stakeholder groups such as women by giving voice to their priorities and concerns. Separate data/information of women and men, and other social groups should be collected and gender based analysis to be done.	Complements quantitative methods for data gathering by providing reliable, qualitative, in-depth information on the socio-cultural conditions and perceptions of target groups. Facilitates the development of initiatives that are demand-driven and enhances their sustainability.	Approach does not offer a decision framework for differing perceptions of priorities and values Requires good understanding on the part of beneficiaries of project aims and issues.	Rural Roads & Market Improvement & Maintenance project in Bangladesh conducted a gender-responsive beneficiary survey that identified gender gaps, needs, constraints and priorities for women and men. Specific measures were included in the project for providing equal opportunities for women and men in participating as labor force, labor contracting services, market management committees, and road maintenance. An evaluation in 2008 revealed that women's and men's participation in non-agriculture wage employment increased and poverty in the area reduced by 5%. (Khandker, Bakht and Koolwal 2008), The Poverty Impact of Rural Roads: Evidence from Bangladesh, <u>Policy Research Working Paper No. 3875</u> , World Bank  The Zambia Social Recovery Project used Bas as a tool for fostering community participation and building in-country capacity in social assessment methodologies.  (Beneficiary Assessment for Monitoring: SDN World Bank Note 98: 1998)	Salmen, L. F. (1995). Beneficiary Assessments: An Approach Described. World Bank ESD Discussion Paper 23. Washington, D.C. Salmen, L. F. (1998). Toward a Listening Bank: A Review of Best Practices and the Efficacy of Beneficiary Assessment, Social Development Paper No. 23, World Bank.
<b>Stakeholder, Institutional and Political Economy Analysis</b>	Stakeholder, institutional and political economy analyses identify people, groups and organizations that have	Through linkages between analysis, policy dialogue and actions, these framework help to reach common	Stakeholder matrices often subjective assessments of experts More thorough and detailed	Zimbabwe Agricultural Market Linkages Program: Conducted extensive stakeholder, institutional and value chain	Social Development Department (2008). The Political Economy of Policy Reform: Issues and

	<p>stakes/interests in projects/policy reforms, and analyze how these political actors, institutions and economic processes influence each other. Focuses on considerations of equity and distribution of power and wealth between different groups and individuals.</p>	<p>ground among different interests and prevent and manage conflict. Broad-based stakeholder processes can help build coalitions of change and transform institutional structures</p>	<p>reviews of power structures resisted by governments and other stakeholders</p>	<p>analysis to identify power relations among market participants (<a href="http://www.ifad.org/english/institutions/sourcebook.pdf">http://www.ifad.org/english/institutions/sourcebook.pdf</a>)</p>	<p>Implications for Policy Dialogue and Development Operations. World Bank. Washington DC. DFID and World Bank (2005). Tools for Institutional, Political &amp; Social Analysis (TIPS): Sourcebook for PSIA. <a href="http://www.worldbank.org/tips">http://www.worldbank.org/tips</a></p>
<p><b>Poverty and Social Assessment (incl. Gender Assessment)</b></p>	<p>Poverty and social Assessment helps determine various types of social structures, processes, and changes within a specific group or community. Social assessments also encompass a review of political, social, and economic trends that may affect the group or community of interest, and an analysis of the distributional impacts of project interventions or policy reforms.</p>	<p>Helps understand differential impacts by identifying winners and losers</p> <p>Identify social factors and processes that cannot be directly observed</p> <p>If conducted in participatory manner, help to build local capacities and enhances social capital</p>	<p>Baseline Data often lacking, and rigor of conclusions requires sophisticated quantitative and quasi-experimental methods</p> <p>Can be time-consuming and costly</p> <p>Findings often controversial, and – if not integral part of policy process – recommendations ignored</p>	<p>The Kenya Adaptation to Climate Change in Arid Lands (KACCAL) conducted detailed social and gender assessments during project preparation (<a href="http://www.boell.org/downloads/HBF_SCCF_Gender_Brief_Formatted.pdf">www.boell.org/downloads/HBF_SCCF_Gender_Brief_Formatted.pdf</a>)</p> <p>A gender-responsive PSIA was carried out in Bulgaria, Moldova, Azerbaijan, and Kazakhstan, gender based impacts on reform were identified and addressed in the program. <b>(Nora Dudwick 2007)</b> Land Reform and Farm Restructuring in Transition Countries: The Experience of Bulgaria, Moldova, Azerbaijan, and Kazakhstan</p>	<p>Bird, K., Curran, Z., Evans, A. and S. Plagerson (2005). What has DFID Learned from the PSIA Process? ODI Report for PAM, DFID.</p> <p>Independent Evaluation Group World Bank (2010). Analyzing the Effects of Policy Reforms on the Poor: An Evaluation of the Effectiveness of World Bank Support to Poverty and Social Impact Analyses. The World Bank, Washington DC.</p>
<p><b>PROCESSES</b></p>					
<p><b>Access to Information</b></p>	<p>Often the first stage in engaging stakeholders, information access is a set of rules and procedures, ideally stipulated by law, which allows stakeholders to find out about the main issues and implications of development initiatives. Prominent part of environmental assessment mechanisms, and at the</p>	<p>Motivates and empowers people to participate in an informed manner</p> <p>Levels the playing field</p>	<p>Capacity constraints might prevent information from being utilized in an effective and efficient manner</p> <p>Does not allow for feedback and cooperative decision-making</p> <p>High level of illiteracy in developing countries, limits poor citizens awareness of information.</p>		<p>Foti, J. and de Silva, L. (2010). A Seat at the Table: Including the Poor in Decisions for Development and Environment. World Resources Institute, Washington DC. Daniel Barragán, D.(n.d.) <i>Access to Information as a Tool for Citizen Participation in Environmental Matters</i>. CEDA</p>



	centre of claims for environmental and social justice.				
<b>Gender Inclusive Consultation</b>	<p>Consultation covers a wide range of processes of differing scope and intensity, providing two-way communication and decision-making avenues to stakeholders. In countries where women are segregated inside households, women facilitators are needed to consult with women. They can include any or all of the elements below:</p> <ol style="list-style-type: none"> <li>1. Discovery - a search for whatever information, definitions or alternatives consultation might reveal.</li> <li>2. Education - inform and educate the public about an issue and a proposed alternative.</li> <li>3. Measurement - assess public opinion on a set of options.</li> <li>4. Persuasion - persuade people toward a preferred option.</li> <li>5. Legitimization - comply with public norms or legal requirements.</li> </ol>	<p>Mechanism to get buy-in from stakeholders, build consensus and enhance sustainability</p> <p>Opportunity to adjust and fine-tune project components to local context</p> <p>Allows for the incorporation of additional information and knowledge that can reduce project risks</p>	<p>Difficulty to choose participants that adequately represent the affected stakeholders</p> <p>Time available for consultation is often tightly constrained, and there may be more restrictions on the disclosure of information.</p> <p>Two-way flow of information is not always achieved.</p>	<p>Integrated conservation development planning in Richtersveld, South Africa, employed comprehensive and effective consultation and consensus-building processes.</p> <p>(<a href="http://cmsdata.iucn.org/downloads/sharing_power.pdf">http://cmsdata.iucn.org/downloads/sharing_power.pdf</a>)</p>	<p>Whiteman, G. &amp; Mamen, K. (2002). Meaningful consultation and participation in the mining sector? A review of the consultation and participation of Indigenous peoples within the international mining sector. Ottawa: The North-South Institute.</p> <p>Wicklin, W. A. V. (2001). <i>The World Bank's experience with local participation and partnerships: Lessons from an OED Evaluation</i>. Presented in OED Conference on Evaluation and Development: The Partnership Dimension, July 23, 2001.</p>

<p><b>Free, Prior and Informed Consent (FPIC)</b></p>	<p>FPIC is a process which implies and requires an iterative series of discussions, consultations, meetings and agreements. Used primarily in the context of indigenous peoples, it respects their inherent and prior rights to their lands and resources their legitimate authority to veto initiatives. It will be essential to get voices of Indigenous women and their consent.</p>	<p>Indigenous peoples have control over developmental projects and accrue benefits of development.</p> <p>Ensures equitable distribution of project benefits.</p> <p>Helps safeguard indigenous people's cultural and social concerns, customary laws, traditional knowledge, innovations and practices, traditional use and occupancy of lands and natural resources.</p> <p>Helps to reduce conflict later on in project implementation</p>	<p>Government reluctance to establish indigenous peoples rights over the resources.</p> <p>Relies on proactive identification of potential threats to their territories and resources.</p> <p>Identification of indigenous and tribal institutions is time consuming.</p> <p>High level of illiteracy in developing countries, limits poor citizens awareness of Information.</p>	<p>GEF funded Indigenous Management of Protected Areas in the Peruvian Amazon reported substantial empowerment of the Indigenous women and men, facilitated by the free and prior consent process used by the project. The project initiated affirmative action in women's representation in project committees for decision making and management, skill development and equitable gender composition within indigenous grassroots organizations. Women became treasurers of most of the project committees and the project evaluation indicates that women were recognized for their talent in managing funds in an efficient, fair and transparent manner. (World Bank, 2008, ICR)</p> <p>Roundtable on Sustainable Palm Oil (RSPO) has integrated FPIC in its Principles and Criteria (<a href="http://rspo.org/files/resource_centre/RSPO%20Principles%20&amp;%20Criteria%20Document.pdf">http://rspo.org/files/resource_centre/RSPO%20Principles%20&amp;%20Criteria%20Document.pdf</a>)</p>	<p>Goodland, R. (2005). Strategic Environmental Assessment and the World Bank Group. <i>International Journal of Sustainable Development &amp; World Ecology</i>, 12, 3, 245 – 255.</p> <p>Griffiths, T. (2005). Indigenous peoples and the World Bank: experiences with participation. Forest Peoples Programme, UK.</p>
<p><b>Co-management</b></p>	<p>Co-management encompasses a wide range of power-sharing arrangements between different stakeholders including women, which aim at dividing rights and responsibilities for the management and decision-</p>	<p>Allows for the pooling of different sets of resources and skills</p> <p>Enhances the legitimacy and sustainability of resource management regimes</p> <p>Often facilitates a more equitable distribution of benefits (and costs)</p>	<p>Co-management arrangements and governance structures often complex and unwieldy with high transaction costs</p> <p>Difficult to strike a balance between efficiency and inclusion</p> <p>Power disparities get</p>	<p>HASHI Afforestation Project in Tanzania successfully implemented joint forest management for the restoration of woodlands (<a href="http://www.wri.org/publication/content/8108">http://www.wri.org/publication/content/8108</a>)</p> <p>Kafley Community Forest, Lamatar, Nepal: Kafley</p>	<p>Carlsson, L and Berkes, F..(2005), Co-management: concepts and methodological implications. <i>Journal of Environmental Management</i>, Volume 75, Issue 1.</p> <p>Borrini-Feyerabend, G., et al. (2004) <i>Sharing Power: Learning by Doing in Co-</i></p>

	<p>making of natural resources and other public goods. Examples include joint forest management or co-management of protected areas.</p>		<p>perpetuated in co-management institutions</p>	<p>Community Forest, Lalitpur district is a block of 96 ha managed by the 60 households that constitute community forestry user group (CFUG). The membership to Kafley CFUG is voluntary and contingent upon resource use. Eleven elected executive committee members, out of which, six are women head Forest User Committee (FUC) Strict forest protection measures put in place have started to provide dividends. The available data indicate an increase in total carbon stock of more than 1 ton per hectare. It represents around 2% annual growth in carbon stock. Kafley CFUG is also responsible for the additional sequestration of around 440 tons of carbon dioxide per year over its total area of 94 ha to the reduction in emissions that would have occurred if there had been no forest management and the forest had continued to deteriorate in the way it was going before the CFUG started its work. The community income increased to \$880 per year that is an increase by \$280. It is a significant increase in cash income. <i>Karky (2006)</i> Kafley Community Forest, Lamatar, Nepal. In: Daniel Murdiyarsa and Margaret Skutsch (eds.) Community forest management as a carbon mitigation option: Case</p>	<p><i>management of Natural Resources throughout the World</i>, IIED and IUCN/CEESP.</p>
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				studies. Center for International Forestry Research (CIFOR), Bogor, Indonesia	
<b>OPERATIONS</b>					
<b>Gender-responsive Safeguards</b>	Policies designed specifically to ensure that negative environmental, social and gender impacts of projects are identified, assessed and mitigated throughout the project cycle (“do no harm”). Currently, safeguard policies and practices stress more on “do better” and promote development effectiveness.	Policies provide good principles for compensation for loss of land/asset and environmental protection, and safeguarding livelihood of the affected people. Principles include social and gender issues. Policies often integral part of project cycle, and part of legal obligations. Provide enforceable (eg. through Inspection Panel) commitments	Policies fragmented, and coverage limited to specific challenges such as resettlement. Focus on negative impacts can lead to lost opportunities in terms of positive dimensions. Client resistance to safeguards can invite forum-shopping to seek out less restrictive options. Policies are open to interpretation. While WBG policies include “squatter’s rights”, government usually do not compensate displaced people who do not have legal titles to land/asset.	Mumbai Urban Transport project (MUTP), provided joint title of houses to displaced couples. This enabled women to access credit from formal banking system with collateral, initiate enterprises, enhanced income, resulting security and self-esteem. Bolivia-Brazil Gas Pipeline Project (GASBOL) project as best practices in mainstreaming environmental and social safeguards ( <a href="http://commdev.org/files/1903_file_BestPractices.GasPipelines.JDQ.pdf">commdev.org/files/1903_file_BestPractices.GasPipelines.JDQ.pdf</a> )	Asian Development Bank Operations Evaluation Department (2006). Special Evaluation Study of Environmental Safeguards. Asian Development Bank, Manila, Philippines. Shihata, I. F. I. (ed.). (2000). <i>The World Bank Inspection Panel: In Practice 2</i> . Oxford: Auflage.

<p><b>Social Accountability</b></p>	<p>Social Accountability mechanisms refer to a broad range of actions (beyond voting) that citizens, communities and civil society organizations can use to hold government officials and bureaucrats accountable. These include citizen participation in public policy making, participatory budgeting, public expenditure tracking, citizen monitoring of public service delivery, citizen advisory boards, lobbying and advocacy campaigns.</p>	<p>Social accountability mechanisms can lead to <i>improvements in government programs and services</i>. Citizen, women and men of the communities participation in policy-making and planning processes, for example, can result in the development of programs that better reflect citizen priorities and are better adapted to their needs. Social accountability mechanisms can play an important role in enhancing government credibility and legitimacy. Enhanced social accountability can also lead to <i>increased resources</i>, both from international donors (who increasingly require enhanced mechanisms of accountability) and from tax-paying citizens.</p>	<p>Civil society actors who become too closely associated with government processes can suffer weakened links with their constituencies and a loss of legitimacy (Co-optation).</p> <p>Potential of elite capture of agenda-setting and decision-making processes by more powerful or influential stakeholders. This is often due to elite having more access to power and being more vocal.</p> <p>Risk of conflict or adversarial attitudes towards state, if state is not able to meet expectations and standards set by its citizen.</p>	<p>The system focuses on promoting good forest governance and sustainable forest management by developing a decision-making environment where systematic, reliable, accurate and current information on forest-change, carbon stocks, timber resources and related decisions are continuously made available to the general public (<a href="http://www.sekala.net/files/Fomas%20Dephut%20final.pdf">http://www.sekala.net/files/Fomas%20Dephut%20final.pdf</a>).</p>	<p>Social Development Department World Bank (2006). <i>Social Accountability: Strengthening the Demand Side of Governance and Service Delivery</i>. World Bank, Washington DC.</p> <p>Ackerman, J. (2005). <i>Social Accountability in the Public Sector: A Conceptual Discussion</i>. Social Development Paper No. 82. Washington, DC</p>
<p><b>Community-Driven Development (CDD)</b></p>	<p>CDD is an approach that gives control over planning decisions and investment resources to community groups and local governments. CDD programs operate on the principles of local empowerment of women and men, participatory governance, demand-responsiveness, administrative autonomy, greater downward accountability, and enhanced local capacity.</p>	<p>Community organization and social mobilization enhance social capital Ensures that local priorities, concerns and knowledge are driving the process Facilitates the ownership and sustainability of development interventions.</p>	<p>Localized initiatives can increase disparities with communities outside project area, leading to tension and conflict Inherent difficulty to scale up without support/participation of national and sub-national authorities Challenge of elite capture and the perpetuation of existing communal socio-economic imbalances</p>	<p>Andhra Pradesh Drought Adaptation Initiative (AP-DAI): Supports community-based adaptation pilots (<a href="http://www.wassan.org/apdai.htm">http://www.wassan.org/apdai.htm</a>)</p>	<p>World Bank (2005). <i>The Effectiveness of World Bank Support for Community-Based and -Driven Development: An OED Evaluation</i>. The World Bank: Washington DC.</p> <p>Binswanger-Mkhize, H. P., De Regt, J.P., and Spector, S. (2010). <i>Local and Community Driven Development: Moving to Scale in Theory and Practice</i>. New frontiers in Social Policy, World Bank, Washington DC.</p>

<p><b>Social guarantees (and other rights-based approaches)</b></p>	<p>Social guarantees (and other rights-based approaches) are sets of legal or administrative mechanisms that determine specific entitlements and obligations, related to certain rights, and ensure the fulfillment of those obligations on the part of the state.</p>	<p>Safeguards that society provides to all its members, ensuring their access to essential opportunities and well-being. Contribute to reducing gaps in opportunity among citizens by promoting universal access to, and a basic quality standard for, essential services. Approaches strengthen democratic governance, as they require the achievement of a non-discriminatory agreement among all members of society as to the level of basic entitlements of each individual or collective.</p>	<p>Extensive allocation and enforceability of social and economic rights might curtail flexibility of policy maker.  Tradeoffs between particular rights and guarantees have to be carefully managed  Often preclude consensus-based and/or negotiated solutions</p>	<p>The <i>conversatorio</i> process in Colombia developed the capacity of citizens to understand and articulate their rights and responsibilities and negotiate with state actors (<a href="http://www.indiaenvironmentportal.org.in/files/right-basedapproaches.pdf">http://www.indiaenvironmentportal.org.in/files/right-basedapproaches.pdf</a>).</p>	<p>World Bank, and The Organization of American States (n.d.) Increasing Social Inclusion through Social Guarantees. A Policy Note, The World Bank.  Gacitúa-Marió et al. ( 2009) Building Equality and Opportunity Through social Guarantees: New Approaches to Public Policy And The Realization of Rights. The World Bank.  Schreckenber, K., Camargo, I., Withnall, K., Corrigan, C., Franks, P., Roe, D., Scherl, L. M. and Richardson, V. (2010) <i>Social Assessment of Conservation Initiatives: A review of rapid methodologies</i>, Natural Resource Issues No. 22. IIED, London.</p>
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### Annex 3: Approaches and Instruments for Environmental Mainstreaming

Instruments	Description	Benefits	Constraints	Good Practice	Key References
<b>ANALYSIS</b>					
<b>Environmental Issues Paper/State of Environment Report</b>	An assessment of the state of the environment or key environmental issues affecting a country, region or a sector. Countries often publish these documents as State of the Environment Reports and/or Environmental Issues Papers. It is usually conducted by experts to inform decision makers.	Provides a broad assessment of the full range of environmental issues. Often led by countries (as opposed to donor agencies)	Typically expert-driven, top-down approach. These reviews rarely prioritize between different environmental issues nor relate the environmental issues to broader country level priorities linked with sustainable growth and poverty reduction.		
<b>Public Environmental Expenditure Review (PEER)</b>	Systematic way for assessing public expenditures on environmental issues. PEER can be carried out as a stand-alone exercise or part of a wider public expenditure review.	PEER allow for the comparison of targeted and actual outputs and performance, thus providing information on cost-effectiveness and promoting an emphasis on program delivery and on the effective use of public resources. Can be a useful tool for ensuring sufficient public funding for environment.	Typically expert-driven, top-down approach. Defining environmental expenditures and then gathering specific data on environmental expenditures can be challenging. A PEER carried out in a vacuum has limited use, as it only provides information on expenditures, but does not allow for an assessment of whether the funds are being used on priority environmental activities. This does not provide any indication of private spending on environment.	A PEER (as part of a CEA) in Colombia looked at spending by central and regional environmental authorities. The review found that expenditures were not covering the areas that had been identified as top priorities through representative surveys of the population and a COED analysis. This helped the government to realign their expenditures in line with the need of the most vulnerable groups and better link environmental priorities with social and poverty reduction objectives.	A. Markandya, K. Hamilton and E. Sanchez-Triana. 2006. <i>Getting the Most for the Money- How Public Environmental Expenditure Reviews can Help</i> . Environment Strategy Note No. 16. Environment Department, World Bank. World Bank. 2006. <i>Republic of Colombia: Mitigating Environmental Degradation to Foster Growth and Reduce Inequality</i> . Report No. 36345-CO, Washington Dc, World Bank.

<p><b>Cost of Environmental Degradation (COED)</b></p>	<p>Measures the loss in a country's welfare due to environmental degradation. This includes loss of healthy life and well-being of the population because of pollution and productivity losses due to natural resource depletion. Cost of degradation estimates are often expressed as a percentage of gross domestic product (GDP) to provide a useful benchmark for economic policy makers.</p>	<p>Very effective tool to raise attention of finance and planning ministry officials to the importance of environmental degradation to their country's economy.</p>	<p>Typically expert-driven, top-down approach. Often the costs of illness and mortality are easier to assess and value than costs related with natural resource depletion.</p>	<p>A comprehensive approach to calculating and sharing the costs of environmental degradation in the Middle East and North African countries has resulted in raising the attention of the respective countries' finance ministers to environmental matters.</p>	<p>Katherine Bolt, Giovanni Ruta, and Maria Sarraf. 2005. <i>Estimating the Cost of Environmental Degradation</i>. Environment Department Paper, The World Bank. M. Sarraf, 2004. <i>Assessing the Costs of Environmental Degradation in the Middle East and North Africa Region</i>, Environment Strategy Note 9, World Bank, Washington DC</p>
<p><b>Cost-Benefit Analysis (that internalizes environmental costs and benefits)</b></p>	<p>Form of economic analysis that incorporates positive and negative externalities into project and policy analysis. Aims to place environmental costs and benefits in economic terms by placing a value on productivity gains/losses due to environmental health conditions, change in economic activity or related livelihoods linked with natural resource use, etc.</p>	<p>Broadens traditional economic analysis to capture wider cost of policy and project interventions. Incorporates market failures and other imperfections.</p>	<p>Expert-driven, top-down approach. Primarily economic instrument that does not incorporate political and institutional factors. It is difficult to assign values for some aspects of environment and natural resources (e.g. biodiversity loss).</p>	<p>The Peru Country Environmental Analysis (CEA) included detailed cost-benefit analyses for several environmental priorities to help decision-makers better assess how to address these priorities in an efficient and effective manner.</p>	<p>World Bank. 2007. <i>Environmental Sustainability: A Key to Poverty Reduction in Peru</i>. Country Environmental Analysis. Washington DC, World Bank.</p>



<p><b>Country Environmental Analysis</b></p>	<p>Country Environmental Analysis (CEA) is an upstream analytical tool used by multiple MDBs for systematic country diagnostic studies. The CEA aims to integrate environmental considerations into MDB's country assistance strategies (CAS), national poverty reduction strategy papers (PRSP), and national development plans by linking natural environment priorities to sustainable growth and poverty reduction priorities. CEAs typically consist of multiple studies, such as COED, PEER, institutional analyses, cost-benefit analysis, among others.</p>	<p>CEAs attempt to link environmental issues to broader development and poverty reduction issues, as a way of prioritization. CEAs can be effective instruments to initiate a dialogue on environment-development priorities with government stakeholders. CEAs are typically prepared by consultants in close coordination with government authorities, and also undertake dissemination of findings with a broader set of stakeholders. A few CEAs have been carried out in a much more interactive/joint way with national stakeholders, using a process described below under SEA (as applied to policies).</p>	<p>CEAs could be conducted in such a way that they are expert-driven and top-down approaches. CEAs typically do not actively work to create national champions beyond government stakeholders in a country (with some notable exceptions).</p>	<p>The Colombia CEA conducted jointly by the Government of Colombia and the World Bank led to a sustained effort by the Colombian authorities to strengthen their environmental management policies and framework and to support the country's efforts to mainstream environment in the National Development Plan in order to promote sustainable development.</p>	<p>Poonam Pillai (2008). <i>Strengthening Policy Dialogue on Environment: Learning from Five Years of Country Environmental Analysis</i>. Environment Department Paper. Washington DC, World Bank. E. Sanchez-Triana, K. Ahmed and Y. Awe, 2007. <i>Environmental Priorities and Poverty Reduction: A Country Environmental Analysis for Colombia</i> Washington DC, World Bank.</p>
<p><b>ANALYSIS combined with PARTICIPATORY PROCESSES</b></p>					
<p><b>Environmental Impact Assessment</b></p>	<p>Combines analysis and consultation. EIAs typically consist of the following steps: Screening – determination of the need for EIA by assessing environmental impacts Scoping – Identification of the impacts the EIA should assess. The scope of the work is usually determined by experts; in some jurisdictions the public is invited to participate. Identification, prediction and evaluation of impacts – The process of forecasting and evaluating impacts. Public participation is an important element in many countries at</p>	<p>Legal regulatory tool in most countries Systematic approach to assess environmental impacts and possible mitigation measures Extensive experience in using EIA has made EIA systems the backbone of environmental and social management systems in most countries</p>	<p>Consultation dimension is often poor in most countries Effectiveness is compromised in many countries due to the focus of EIA systems on environmental permitting rather than on follow-up in terms of compliance monitoring Effective EIA implementation is constrained by institutional weaknesses and limited financial, technical and human capacities, particularly in poor countries.</p>		<p>IDB Environment Assessment Review for Latin American Countries (Virginia Alzina)</p>

	<p>this stage, though quality of participation/consultation is variable. Professional judgment often plays a major role.</p> <p>Mitigation – Measures intended to avoid, reduce or off-set adverse effects of an action.</p> <p>Monitoring – This alerts authorities to unintended outcomes that can be controlled by mitigation measures.</p>				
<b>Strategic Environmental Assessment</b>	<p>Strategic Environmental Assessment (SEA) describes analytical and participatory processes for incorporating environmental considerations into policies, plans and programs at early stages of decision making. It extends the application of environmental assessment from projects to policies, plans and programs, and assesses environmental aspects considering their inter linkages with social and economic factors.</p> <p>The OECD DAC SEA Guidance describes SEA as a family of approaches which use a variety of tools, rather than a fixed, single, and prescriptive approach.</p> <p>Traditionally SEA approaches range from those that follow a similar methodology to EIA (described above) to those that focus on a greater degree on strengthening</p>	<p>Takes a strategic approach to the assessment, presenting decision-makers with alternatives upstream of the process to foster sustainable development. SEA is a legal regulatory tool in many countries.</p>	<p>If the SEA is conducted in parallel to the plan, program or policy formulation exercise, rather than in an integrated way, the opportunity to influence the respective plan, program and policy is limited.</p> <p>SEA practitioners often focus on the preparation of an SEA report, rather than on viewing the SEA as a critical step in environmental and social mainstreaming, which is a continuous process beyond the production of the report. (This is addressed further below)</p>	<p>The Combined Strategic Impact Assessment (SIA) and Cumulative Impact assessment (CIA) for the Lao PDR's Hydropower Development Plan (related to the Nam Theun 2 project) made a significant contribution to:</p> <ul style="list-style-type: none"> <li>• Lao PDR adoption in 2005 of the "National Policy on Environmental and Social Sustainability for the Hydropower Sector."</li> <li>• Improved resettlement and consultation practices.</li> <li>• Creation of the Watershed Management and Protection Authority for NT2.</li> <li>• Integrated river basin planning</li> <li>• Guidelines for environmental and social analysis</li> <li>• Understanding of riparian</li> </ul>	<p>OECD DAC, 2006, <b>Applying Strategic Environmental Assessment. Good Practice Guidance for Development Cooperation</b>, DAC Guidelines and Reference Series. OECD Publishing. Paris.</p> <p><i>Lao PDR's Hydropower Development Plan (related to the Nam Theun 2 project) Environment Notes, No 2, July 2009. World Bank</i></p>

	underlying institutions and governance factors. The latter is termed policy SEA or institution-centered SEA (see below) and has a very different approach, where the participation dimension is particularly heightened.			risks of international rivers system of the Mekong <ul style="list-style-type: none"> <li>• Compliance with WB and ADB safeguard policies</li> </ul>	
<b>Strategic Environmental Assessment (as applied to policies and sector reform)</b>	<p>This is an SEA approach that attempts to influence policy making and strengthen underlying institutions and governance factors. The four process steps of this approach to SEA are</p> <p>(i) situation and stakeholder analysis where key environmental and social issues are identified and a public participation plan prepared ,</p> <p>(ii) environmental priority setting by all key stakeholders that opens the policy process to their influence,</p> <p>(iii) institutional, capacity and political economy assessment where key gaps for managing environmental and social priorities are identified by the SEA team and validated by stakeholders, and</p> <p>(iv) formulation of policy, legal, institutional regulatory and capacity adjustments to be incorporated in policy and sector reform. These steps rely on iterative participatory and analytical processes.</p>	<p>The use of this SEA methodology enhances development planning and policy making, and ultimately the quality of growth by</p> <ul style="list-style-type: none"> <li>• Raising attention to environmental and social priorities,</li> <li>• Strengthening constituencies around environmental and social priorities,</li> <li>• Enhancing social accountability by fostering transparency in decision making, and</li> <li>• Promoting social learning</li> </ul> <p>The end result of this type of SEA activity would be policy influence that integrates key environmental and social issues in policy formulation and implementation, in order to contribute to sustainable development.</p>	<p>Contextual factors are important in hindering or facilitating the attainment of benefits of policy SEA, among them country ownership, power elites and the political economy of policy reform are of paramount importance.</p> <p>SEA is but a small and bounded intervention in the continuous process flow of policy making, and so positive outcomes from even this approach to SEA could be short-lived. Potentially this approach to SEA contributes to sustain outcomes over the longer term by strengthening constituencies, enhancing policy capacities and broadening policy horizons. However, unless followed by specific institutional strengthening and capacity building interventions as part of policy and sector reform, this beneficial effect will wane over time.</p>	<p>West Africa Mineral Sector Strategic Assessment (WAMSSA) - The purpose of this pilot was to identify the regional policy, institutional and regulatory adjustments required to integrate social and environmental considerations into minerals sector development in the Mano River Union countries.</p> <p>SEA outcomes include:</p> <ul style="list-style-type: none"> <li>• Contributed to improve dialogue over environmental and social issues, including quite elaborate techniques for engaging local, national and regional stakeholders in the policy dialogue..</li> <li>• Built support on a regional approach for environmental and social management in the context of mining reform.</li> <li>• Opened up examination of the institutional mechanisms used to deal with regional planning and harmonization.</li> <li>• Strengthened civil society organizations working in the mining sector by promoting discussion on a regional agenda for</li> </ul>	<p>World Bank, University of Gothenburg, Swedish EIA Centre, and Netherlands Commission for Environmental Assessment. 2010. <i>Policy SEA: Conceptual Model and Operational Guidance for Applying Strategic Environmental Assessment in Sector Reform.</i></p> <p>World Bank, 2010, <i>West Africa Mineral Sector Strategic Assessment. Environmental and Social Strategic Assessment for the Development of the Mineral sector in the Mano River Union</i>, (Forthcoming)</p>

				<p>mining reform.</p> <ul style="list-style-type: none"> <li>Stakeholders proposed a sophisticated ongoing “multi-stakeholder framework” that would include a series of multi-stakeholder bodies formed at the regional, national and local level to ensure transparent stakeholder participation and social accountability for mining development decisions in the Mano River Union .</li> </ul>	
<b>OPERATIONS</b>					
<b>Safeguards</b>	<p>Policies designed specifically to ensure that negative environmental and social impacts of projects are identified, assessed and mitigated throughout the project cycle (“do no harm”)</p> <p>One of the main instruments is EIA.</p>	<p>Policies provide minimum mandatory standards for the consideration of environmental and social issues</p> <p>Policies often integral part of project cycle, and part of legal obligations</p> <p>Provide enforceable (eg. through Inspection Panel) commitments</p>	<p>Focus on negative impacts can lead to lost opportunities in terms of positive dimensions. Mandatory standards (regulations) are often of limited effectiveness for promoting “do good” environmental behavior.</p> <p>Client resistance to safeguards can invite forum-shopping to seek out less restrictive options</p>		<p>Asian Development Bank Operations Evaluation Department (2006). Special Evaluation Study of Environmental Safeguards. Asian Development Bank, Manila, Philippines.</p> <p>Shihata, I. F. I. (ed.). (2000). <i>The World Bank Inspection Panel: In Practice 2</i>. Oxford: Auflage.</p>
<b>Promoting environmental sustainability</b>	<p>This approach focuses on moving beyond “do no harm” to “doing good” in terms of environmental quality for both current and future generations.</p> <p>MDG Goal No. 7 strives to “ensure environmental sustainability”</p>	<p>The concept emphasizes the notion of “carrying capacity” i.e. the ability of the ecosystem to regenerate and be maintained at a particular level of environmental quality over long periods of time/different generations. It also stresses the notion of substituting rather than degrading or depleting natural capital for other forms of capital.</p>	<p>In practice, this is a difficult concept to apply, and can comprise a myriad of local and global environmental issues and priorities.</p> <p>Addressing these priorities may entail trade-offs between environmental issues. Further different environmental issues may be relatively more important to different stakeholders.</p> <p>Success is difficult to measure (for the above reasons).</p>		

<p><b>Promoting environmental and social sustainability</b></p>	<p>These form two of the three pillars for sustainable development (economic sustainability being the third). This concept emphasizes both environmental sustainability and social responsibility and engagement (in a broad sense, ranging from enhancing social accountability to approaches which emphasize co-management and benefit-sharing).</p>	<p>This concept strives to rebalance the three pillars of sustainable development, so each are given equal footing (often the economic has been more prominent than the other two). Success linked with the achievement of environmental or social sustainability is mutually interdependent. Quality of life (in terms of health, livelihoods and vulnerability) affects social structure and social harmony. Equally, environmental sustainability depends on hearing the voice of all stakeholders and actively engaging them to achieve environmental quality goals.</p>	<p>In practice, these concepts take time to apply, and therefore require process indicators, rather than outcome indicators to measure success. Such approaches require both forums for dialogue and learning, but also excellent processes in place for both consensus building as well as conflict resolution.</p>		
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## Annex 4. Background work for CTF and SREP Indicator Proposals

In the left column indicators from the present results frameworks are listed for each program according to whether they are social/poverty, local environment or gender, and in the right column is presented what I have interpreted as the development co-benefit

<b>Climate Technology Fund -CTF</b>	
<b>Indicators</b>	<b>Social/Poverty development co-benefits</b>
Number of jobs created (women/men)	Increased employment
Annual duration (in hours) of electricity supply interruptions for the average consumer	Improvement of health, education, income generation opportunities etc., and quality of life
<i>Number of people connected to distributed renewable energy power systems (&gt; less than 1 MW or other suitable size</i>	
Number of new connections for domestic/commercial consumers due to projects	
Percentage of population within 2 km of public transport access in project areas	Improved access to services and employment
<i>Cost cts (\$?)/passenger km to consumer, rural/ urban</i>	
	Local Environment development co-benefits
Level of particulates and SOx emissions Kg/ MWh	Improved health of population
Level of PM10 and NOx concentrations	
	Gender development co-benefits
Number of jobs created (women/men)	Increased employment
<b>Scaling up renewable energy program - SREP</b>	
<b>Indicators</b>	<b>Social/Poverty development co-benefits</b>
% level (women/men) of population with access to energy services from RE	Improvement of health, education, income generation opportunities etc., and quality of life
Number and kWh of additional RE off-grid or mini-grid RE connections	
<i>kWh total off-grid and mini-grid RE connections and people feeding back into main grid</i>	
# of project beneficiaries with access to energy services from RE (socioeconomic status)	
<i>\$ cost / GWh of RE for project beneficiaries compared to FF/conventional</i>	
Annual duration (in hours) of electricity supply interruptions for the average consumer (Urban/rural)	
<i># of GWh per capita</i>	

Level of particulates and Sox emissions Kg / MWh <b>Or</b> % of dwellings meeting WHO indoor air quality guidelines (choose based on data availability)	Improved health and reduced mortality
	<b>Local Environment development co-benefits</b>
Level of particulates and Sox emissions Kg / MWh <b>Or</b> % of dwellings meeting WHO indoor air quality guidelines (choose based on data availability)	Improved health and reduced mortality
	<b>Gender development co-benefits</b>
% level (women/men) of population with access to energy services from RE	
% of total energy sector employment working in RE (women/men)	Equal opportunities for women
<b>Pilot Program for Climate Resilience- PPCR</b>	
<b>Indicators</b>	<b>Social/Poverty development co-benefits</b>
Number of people classified as poor or food insecure in regions where climate change is associated with potential food supply problems	
Water Resources Management Additional available water per capita/household	
Disaster Risk Management Number of people/communities covered by early warning systems	
Health Health risks due to climate change reflected in policies and budget for programs	Improved health and reduced mortality.
Number of lives lost during extreme climatic events	Reduced mortality from climatic events
Number of stakeholders (communities, households, individuals, agencies, etc.) engaged in vulnerability reduction or improved adaptive capacity activities	
Number of beneficiaries of small-scale, community-based projects in the areas of natural resource management, particularly water, energy and land tenure; and small-scale local food farming for sustenance and health	
Changes in budget allocations towards sectors/regions with higher degree of vulnerability	Improved education, health and reduced mortality.
Rate of rural – urban migration	Reduced pressure on services for urban populations.
Percentage of school children who are aware of key risks from climate change	
Level of awareness on key issues /impacts by stakeholder type	
Number of joint initiatives of stakeholder groups	
Extent to which stakeholders jointly participate in programs implementation (across usual boundaries).	
Level of awareness key issues (CV/CC impacts, etc) by stakeholder type	
Coastal Zone Development Percent of population able to identify emerging hazards and risk reduction measures	
Percent of population able to identify emerging hazards and risk reduction measures	Improved education and catalytic effects of locally driven adaptive responses.
Rural development and agriculture Increase in yield	Improved health, reduced mortality and increased income generation
	<b>Local Environment development co-benefits</b>

Ecosystem function has been maintained and restored and, where appropriate and cost effective, habitats relocated and created	Protection of habitats, ecosystem function and biodiversity.	
Natural Resources/Fragile Ecosystems Existing conservation activities in protected areas and intervening habitats have been maintained		
Water Resources Management Additional available water per capita/household	Improved health and reduced mortality	
Coastal Zone Development Percent of population able to identify emerging hazards and risk reduction measures	Improved education and catalytic effects of locally driven adaptive responses.	
<b>Gender development co-benefits</b>		
Health Health risks due to climate change reflected in policies and budget for programs	Improved equality of health and mortality outcomes	
Disaster Risk Management Number of people/communities covered by early warning systems		
Water Resources Management Additional available water per capita/household		
Number of beneficiaries of small-scale, community-based projects in the areas of natural resource management, particularly water, energy and land tenure; and small-scale local food farming for sustenance and health		
Percent of population able to identify emerging hazards and risk reduction measures	Improved equality of health, education and mortality outcomes	
Coastal Zone Development Percent of population able to identify emerging hazards and risk reduction measures		
Level of awareness key issues (CV/CC impacts, etc) by stakeholder type		
Extent to which stakeholders jointly participate in programs implementation (across usual boundaries).		
Number of joint initiatives of stakeholder groups		
Level of awareness on key issues /impacts by stakeholder type		
Changes in budget allocations towards sectors/regions with higher degree of vulnerability		
Number of stakeholders (communities, households, individuals, agencies, etc.) engaged in vulnerability reduction or improved adaptive capacity activities		
Number of people classified as poor or food insecure in regions where climate change is associated with potential food supply problems		
Number of lives lost during extreme climatic events		
<b>Forest Investment Program- FIP</b>		
<b>Indicators</b>		<b>Social/Poverty development co-benefits</b>
% income change of households participating in forest conservation and alternative livelihoods programs		Increased income for local populations and decreased pressure on forests
Change in Income per hectare (productivity) on land in proximity to forest areas		
# of households engaged in sustainable forestry / non-forest livelihoods	Decreased pressure on forests	
<b>Local Environment development co-benefits</b>		



Percentage( %) change of the country's land mass that has changed due to afforestation	
Percentage (%) change of the country's land that has been reforested	
Percentage (%) change of the country's forest that has been restored	
Percentage% change in hectares of forest cover loss	
Percentage% change in hectares of forest that are degraded	
Area and percent of forest land managed primarily for protective functions, e.g., watersheds, flood protection, avalanche protection, riparian zones	
Percentage % of forest area under active management plans	
Percentage % change in size (hectares) of area by forest type relative to the country's total forest area [proxy]	
Percentage (%) of the country's land that is a protected area [indicator on illegal logging]	
Amount of annual removal of wood products by companies/SME's and forest communities compared to the volume determined to be sustainable	
# of newly formed protected areas in the country	Protection of habitats, ecosystem function, biodiversity and sustainable indigenous cultures/practises. Increased watershed health and decreased vulnerability to floods, landslides, avalanches, erosion.
Percentage( %) change in area where land use designation changed to promote sustainable forest	
% income change of households participating in forest conservation and alternative livelihoods programs	Increased income for local populations
	<b>Gender development co-benefits</b>
% income change of households participating in forest conservation and alternative livelihoods programs	
Change in Income per hectare (productivity) on land in proximity to forest areas	Income equality for women

## Annex 5: Selection of similar indicators as CIFs results indicators

Sources used:

ADB: Development Indicators Reference Manual - Concepts and definitions

ADB: Development Indicators Reference Manual - Concepts and definitions;

ADB: the CCR's CE Project 2009 Progress Report: <http://www.adb.org/Documents/Climate-Change/CCF-Progress-Report-2009.pdf>

WB development indicators at data.wb.org Energy and Environment

WB First Tranche Core Indicators for Energy- IDA Investment Lending Operations

WB core sector indicators

EBRD: Sustainable Energy Initiative (SEI) See:

<http://www.ebrd.com/pubs/factsh/themes/sei2.pdf>

AfDB: Clean Energy Investment Framework for Africa, See Annex #9 for RBM matrix:

<http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/10000025-EN-PROPOSALS-FOR-A-CLEAN-ENERGY-INVESTMENT-FRAMEWORK-FOR-AFRICA.PDF>

IFC DOTS indicators

Clean Technology Fund	
Indicators	Similar Indicators
Energy intensity of GDP (mJ RE / \$ of GDP)	GDP per unit of energy use (ADB), Energy intensity (i.e., energy usage per unit of GDP) decreased by 2% to 5% by the year 2020 (ADB CCR CE), Carbon intensity of lifestyle: CO2 per head of population (AfDB), Carbon dioxide emissions (per capita, metric tons) (WB Development Indicators), Carbon dioxide emissions per capita (ADB)
Percentage share of renewable energy in total primary energy consumption	Energy: Conventional Energy, Renewable energy, traditional energy, primary energy (ADB: Development Indicators Reference Manual- concepts and definitions)
Carbon intensity of energy production (tCO2 eq/MWh)	Carbon intensity of economic activity: CO2 per \$1,000 of GDP (AfDB), Africa's aggregate GHG emissions (in CO2e units) growth rate over 2008-2030 (AfDB), Carbon dioxide emissions (thousand metric tons) (MDG 7, ADB), Carbon dioxide emissions (per capita, metric tons) (ADB), Methane emissions and Nitrous Oxide emissions (WB Dev Indicators),
gCO2/passenger km	
CO2/unit of output- building- construction sector	
CO2/unit of output- industrial sector	
CO2/unit of output- transport sector	
Percentage of low carbon investment of total sector investment - government /private sector	
Degree to which the policy / regulatory environment is supportive of clean technology	

Cost/ unit of production; fossil fuels vs renewable energy	
Cost per ton of Co2 eq abated	
Level of particulates and SOx emissions Kg/ MWh	Air pollution concentrations (ADB)
Level of PM10 and NOx concentrations	Air pollution concentrations (ADB)
Number of jobs created (women/men)	"More employees- / # Temporary jobs, # Total employment (sex disaggregated), # indirect jobs, # New jobs" (IFC DOTS Indicators),
Percentage of total supply from domestic sources	Energy: Imports and exports (ADB), Energy imports, net (WB), Fuel imports reduced by xx% to xx% in target DMCs by 2020 (ADB CCR CE Projects), Utilization of indigenous energy resources increased by xx% to xx% by 2020 (ADB CCR CE Projects)
Percentage of total supply from domestic RE sources	Renewable Energy share in energy mix increased by 2% to 5% in priority DMCs by 2020 (ADB CCR CE)
Annual duration (in hours) of electricity supply interruptions for the average consumer	Average interruption frequency per year in the project area (WB-Energy IDA core indicators)
Number of people connected to distributed renewable energy power systems (> less than 1 MW or other suitable size)	Renewable Energy share in energy mix increased by 2% to 5% in priority DMCs by 2020 (ADB CCR CE)
Tons (millions) of Co2-eq mitigated	Achieved carbon emissions reduction range of 25 to 30 million tonnes per annum (EBRD)
\$ cost per ton of co2-eq mitigated	
Number of km travelled using low carbon modes of transport	
gCO2 /passenger km	
Percentage of population within 2 km of public transport access in project areas (socioeconomic status)	
Cost cts (\$?)/passenger km to consumer, rural/ urban	
Number of MWh	Energy production (ADB), Generation capacity (MW) of conventional generation constructed under the project (WB-Energy IDA core indicators)
Number of MWh saved	
Number of new connections for domestic/commercial consumers due to projects	Number of people provided with access to electricity under the project by household connections (through renewable energy), Number of new community electricity connections under the project, Number of people provided with access to electricity under the project by household connections (through renewable energy), (First Tranche Core Indicators for Energy- IDA Investment Lending Operations), Direct project beneficiaries (number) of which female (percentage), People in urban areas provided with access to electricity under the project by household connections (number) (WB core indicators), Transmission and distribution lines (KM) constructed or rehabilitated under the project (IDA First Tranche Core Indicators)

\$ cost / GWh of RE for project beneficiaries compared to Fossil Fuels/conventional	Lower price for product/ Price \$ (compared to alternative \$) (IFC DOTS indicators)
\$ (Millions) from other public / private sources; percentage of total cost	Total governance expenditure (percent of GDP) (ADB),

<b>SREP</b>	
Indicator	Similar Indicators
% share of energy services from low carbon sources	Energy: Conventional Energy, Renewable energy, traditional energy, primary energy (ADB: Development Indicators Reference Manual- concepts and definitions)
% of RE investment of total energy sector investment	Total governance expenditure (percent of GDP) (ADB) ,
# of countries with supportive EE in place	Number of environmental laws, policies, regulations, or technical standards which have been strengthened or newly enacted which contribute to improved implementation outcomes (WB Core Indicators),
Total revenue of enterprises in RE production and supply sector	
% of total investment in RE sector from private sector	
% of total energy sector employment working in RE (women/men)	"More employees- / # Temporary jobs, # Total employment (sex disaggregated), # indirect jobs, # New jobs" (IFC DOTS Indicators),
% level (urban/rural) of population with access to energy services from RE	Number of people provided with access to electricity under the project by household connections (through renewable energy), Number of new community electricity connections under the project, (First Tranche Core Indicators for Energy- IDA Investment Lending Operations), Direct project beneficiaries (number) of which female (percentage), People in urban areas provided with access to electricity under the project by household connections (number) (WB core indicators), Transmission and distribution lines (KM) constructed or rehabilitated under the project (IDA First Tranche Core Indicators)
Cost of RE \$/mJ compared to cost of FF \$/mJ	
Number of people with more resilient distributed power systems less than 1 MW (or other suitable size)	Renewable Energy share in energy mix increased by 2% to 5% in priority DMCs by 2020 (ADB CCR CE)
kWh total off-grid and mini-grid RE connections and people feeding back into main grid	Renewable Energy share in energy mix increased by 2% to 5% in priority DMCs by 2020 (ADB CCR CE)
Level of particulates and Sox emissions Kg / MWh Or % of dwellings meeting WHO indoor air quality guidelines (choose based on data availability)	Air pollution concentrations (ADB)
% of total supply from domestic sources	Energy: Imports and exports (ADB), Energy imports, net (WB), Fuel imports reduced by xx% to xx% in target DMCs by 2020 (ADB CCR CE Projects), Utilization of indigenous energy resources increased by xx% to xx% by 2020 (ADB CCR CE Projects)

% of total supply from domestic RE source	Renewable Energy share in energy mix increased by 2% to 5% in priority DMCs by 2020 (ADB CCR CE)
Tons (millions) of CO2 –eq at \$ cost per ton [Tons (millions) of CO2-eq abated]	Achieved carbon emissions reduction range of 25 to 30 million tonnes per annum (EBRD)
\$ cost per ton mitigated	
# of GWh from RE	Generation capacity (MW) of conventional generation constructed under the project (WB- Energy IDA core indicators)
# of GWh per capita	Energy usage per person (ADB), Carbon dioxide emissions per capita (ADB)
# of project beneficiaries with access to energy services from RE (socioeconomic status)	
\$ cost / GWh of RE for project beneficiaries compared to FF/conventional	Lower price for product/ Price \$ (compared to alternative \$) (IFC DOTS indicators)
Annual duration (in hours) of electricity supply interruptions for the average consumer (Urban/rural)	Average interruption frequency per year in the project area (WB- Energy IDA core indicators)

<b>PPCR</b>	
Number of people classified as poor or food insecure in regions where climate change is associated with potential food supply problems	
Number of lives lost during extreme climatic events	
Number of stakeholders (communities, households, individuals, agencies, etc.) engaged in vulnerability reduction or improved adaptive capacity activities	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)
Number of beneficiaries of small-scale, community-based projects in the areas of natural resource management, particularly water, energy and land tenure; and small-scale local food farming for sustenance and health	Direct project beneficiaries (number) of which female (percentage) (WB core indicators)
Number of policies introduced to address climate change risks or adjusted to incorporate climate change risks	
Changes in budget allocations towards sectors/regions with higher degree of vulnerability	
Area of protected natural ecosystems	
National results monitoring and evaluation system includes process to monitor adaptation efforts	
Rate of rural – urban migration	
Extent to which MDBs, development partners, developing countries incorporate lessons learned in implementation	
Extent to which international actors incorporate lessons learned on delivery of financing	

Percentage of school children who are aware of key risks from climate change	
Extent to which PPCR knowledge is integrated into existing knowledge sharing mechanism	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)
Number of policies introduced to address climate change risks or adjusted to incorporate climate change risks	
Changes in budget allocations towards sectors/regions with higher degree of vulnerability	
Ecosystem function has been maintained and restored and, where appropriate and cost effective, habitats relocated and created	
National results monitoring and evaluation system includes process to monitor adaptation efforts	
Level of awareness on key issues /impacts by stakeholder type	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)
Number of joint initiatives of stakeholder groups	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)
Leverage factor of PPCR funding: \$US of financing from other sources	
Leverage factor of PPCR funding: \$US of financing from other sources	
Extent to which stakeholders jointly participate in programs implementation (across usual boundaries).	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)
Level of "resilience integration" capacity	
Proportion of government staff working on country strategy with advanced level of expertise on resilience integration	
Number of disaster preparedness plans and contingency plans at all administrative levels and all organizations	
Level of awareness key issues (CV/CC impacts, etc) by stakeholder type	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)
Coverage of climate risk analysis and vulnerability assessments	
<b>Rural development and agriculture</b> Increase in yield	
<b>Water Resources Management</b> Additional available water per capita/household	
<b>Coastal Zone Development</b> Percent of population able to identify emerging hazards and risk reduction measures	
Percent of population able to identify emerging hazards and risk reduction measures	Percentage of men and women who are intended beneficiaries that are aware of project information and project supported investments (WB social development core indicators)

<b>Disaster Risk Management</b> Number of people/communities covered by early warning systems	
<b>Natural Resources/Fragile Ecosystems</b> Existing conservation activities in protected areas and intervening habitats have been maintained	
<b>Health</b> Health risks due to climate change reflected in policies and budget for programs	

<b>Forest Investment Program (FIP)</b>	
Percentage( %) change of the country's land mass that has changed due to afforestation	Forest Area, Proportion of land area covered by forest (ADB); Proportion of land area covered by forest (WB Development Indicators)
Percentage (%) change of the country's land that has been reforested	Forest Area, Proportion of land area covered by forest (ADB); Proportion of land area covered by forest (WB Development Indicators)
Percentage (%) change of the country's forest that has been restored	Forest Area, Proportion of land area covered by forest (ADB); Proportion of land area covered by forest (WB Development Indicators)
Percentage% change in hectares of forest cover loss	Deforestation, Annual , Deforestation rate, (ADB)
Percentage% change in hectares of forest that are degraded	Forest Area, Proportion of land area covered by forest (ADB); Proportion of land area covered by forest (WB Development Indicators)
% income change of households participating in forest conservation and alternative livelihoods programs	
[Reduced fragmentation of forests- more research required]	
[Reduce single species plantations- more research required]	
Area and percent of forest land managed primarily for protective functions, e.g., watersheds, flood protection, avalanche protection, riparian zones	
Percentage % of forest area under active management plans	Forest area under FSC certification measured in hectares (Sustainable Forest Management/ REDD-Plus Results framework)
Percentage % change in size (hectares) of area by forest type relative to the country's total forest area [proxy]	Forest Area, Proportion of land area covered by forest (ADB)
Percentage (%) of the country's land that is a protected area [indicator on illegal logging]	
Amount of annual removal of wood products by companies/SME's and forest communities compared to the volume determined to be sustainable	
Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests,	Number of environmental laws, policies, regulations, or technical standards which have been strengthened or newly enacted which contribute to improved implementation outcomes (WB Core Indicators), Number of changes in environmental institutional mechanisms which promote inclusive management practices or participatory approaches (WB)



Evidence of integrated planning approach between departments to sustainable forestry	Number of environmental laws, policies, regulations, or technical standards which have been strengthened or newly enacted which contribute to improved implementation outcomes (WB Core Indicators), Number of changes in environmental institutional mechanisms which promote inclusive management practices or participatory approaches (WB)
# of newly formed protected areas in the country	
Percentage(%) change in area where land use designation changed to promote sustainable forest	
Change in Income per hectare (productivity) on land in proximity to forest areas	
# of households engaged in sustainable forestry / non-forest livelihoods	

## Annex 6: Comparison of Proposed Indicators for CTF and SREP with Co-Benefits assessed in Chapter 4 of SEA

Co-benefits presented in document " The Environmental, social and gender aspects linked to clean technologies financed under the CIFs" based on CTF Program Review		
		Represented in present indicators:
BRT/ Urban Transport	Provide low income groups with an affordable and efficient mass transit system	<b>CTF</b> "Cost cts (\$?)/passenger km to consumer, rural/ urban"
	Improve employment opportunities for low income groups through greater access to jobs market	<b>CTF</b> "Number of jobs created (women/men)"
	Improved access to basic services for low income groups	<b>CTF</b> "Percentage of population within 2 km of public transport access in project areas ""Cost cts (\$?)/passenger km to consumer, rural/ urban",
	Urban renewal and economic development in BRT corridors	
	Health benefits through reduced pollution	
Wind Energy	Job creation in maintenance and manufacture of components	<b>SREP</b> "% of total energy sector employment working in RE (women/men)", <b>CTF</b> "Number of jobs created (women/men)"
	Employment in rural areas for off-grid projects	<b>SREP</b> "% of total energy sector employment working in RE (women/men)", <b>CTF</b> "Number of jobs created (women/men)"
	Improved electricity coverage in rural areas	<b>SREP</b> "% level (women/men) of population with access to energy services from RE [% level (urban/rural) of population with access to energy services from RE]", <b>CTF</b> "Number of new connections for domestic/commercial consumers due to projects", "Annual duration (in hours) of electricity supply interruptions for the average consumer "
	Local business opportunities using electricity	
Solar Energy	Job creation in maintenance and manufacture of components	<b>SREP</b> "% of total energy sector employment working in RE (women/men)", , <b>CTF</b> "Number of jobs created (women/men)"
	Employment in rural areas for off-grid projects	<b>SREP</b> "% of total energy sector employment working in RE (women/men)", , <b>CTF</b> "Number of jobs created (women/men)"
	Improved electricity coverage in rural areas	<b>SREP</b> "% level (women/men) of population with access to energy services from RE [% level (urban/rural) of population with access to energy services from RE]", <b>CTF</b> "Annual duration (in hours) of electricity supply interruptions for the average consumer"
	Local business opportunities using electricity	
	Improved health benefits from improved air quality in homes from electric light	
Small-scale hydropower	Job creation in maintenance and manufacture of components	<b>SREP</b> "% of total energy sector employment working in RE (women/men)", , <b>CTF</b> "Number of jobs created (women/men)"
	Employment in rural areas for off-grid projects	<b>SREP</b> "% of total energy sector employment working in RE (women/men)", , <b>CTF</b> "Number of jobs created (women/men)"
	Improved electricity coverage in rural areas	<b>SREP</b> "% level (women/men) of population with access to energy services from RE [% level (urban/rural) of population with access to energy services from RE]", <b>CTF</b> "Annual duration (in hours) of electricity supply interruptions for the average consumer"
	Local business opportunities using electricity	
	Education and health benefits from better electricity coverage	
	Improved agricultural production from using water from micro-hydro schemes for irrigation	
	Improved health benefits from improved air quality in homes from electric light	

Biomass	Job creation in maintenance and manufacture of components	<b>SREP</b> “% of total energy sector employment working in RE (women/men)”, <b>CTF</b> “Number of jobs created (women/men)”
	Employment in rural areas for off-grid projects	<b>SREP</b> “% of total energy sector employment working in RE (women/men)”, <b>CTF</b> “Number of jobs created (women/men)”
	Improved electricity coverage in rural areas	<b>SREP</b> “% level (women/men) of population with access to energy services from RE [% level (urban/rural) of population with access to energy services from RE]”, <b>CTF</b> “Annual duration (in hours) of electricity supply interruptions for the average consumer“
	Local business opportunities using electricity	
Geothermal	No direct benefits on local communities since geothermal projects feed into main grid	
	Indirect benefits from increased energy security	
Energy efficiency	Indirect benefits from governments and individuals spending less on energy	<b>Not directly linked to energy efficiency: SREP</b> “Cost of RE \$/mJ [Cost of RE \$/mJ compared to cost of FF \$/mJ ]”, “\$ cost / GWh of RE for project beneficiaries [\$ cost / GWh of RE for project beneficiaries compared to FF/conventional]” <b>CTF</b> “\$ cost / GWh of RE for project beneficiaries compared to Fossil Fuels/conventional”, “Cost / unit of production “
	Cutting production costs on key commodities used by poor people (e.g. Energy savings in Tortilla industry in Mexico)	<b>CTF:</b> “Cost / unit of production“
	Improved heating in municipal housing	

## Annex 7: Review of PPCR Phase 1 Proposals

Phase Country	1 Process to integrate local environmental considerations in preparation of Phase 2 proposal	Process to integrate social/poverty considerations in preparation of Phase 2 proposal	Process to integrate gender considerations in preparation of Phase 2 proposal	Additional comments
Bolivia	See objective	<p>See objective</p> <p><b>Two institutional mechanisms proposed which should help to establish a platform for dialogue on CC beyond PPCR program:</b></p> <p>(i) Establishment of the Plurinational Council on Climate Change, as a platform of dialogue and consultation on climate change, including for the design of financing mechanisms and strategies to secure and assign resources for climate resilience.</p> <p>(ii) Strengthen academic and research capacities on climate resilience, as well as the design and incorporation of climate change modules in the university curricula.</p> <p><b>Priority setting through application of participatory approaches:</b> The climate change vulnerability and impacts assessment as well as the elaboration of climate resilience programs will be carried out by the ministries heads of their sectors and by the autonomous territorial governments accompanied by the Ministry of Environment and Water Resources- National Climate Change Program (MMAyA-PNCC) and the Ministry of Development Planning-Vice ministry of Planning and Coordination (MPD-VPC) besides the feedback of all involved actors and stake holders. As a result, it is expected to count with 3 Strategic Sectoral Programs and at least 3 Strategic Territorial Programs, all of them with their respective investment plans.</p> <p><b>Application of participatory approaches:</b> <i>Formulation of the Strategic Program for Climate Resilience</i>, (subcomponent 3.4) that includes:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Diagnosis to actual and future climate threats, vulnerability, impacts and adaptation capacity associated to the potentials of productive and socio economical development.</li> <li><input type="checkbox"/> Inventory of the existent sectoral and territorial policies related to this issue and development of proposals or of complementary policies, plans, and sectoral / territorial programs on climate</li> </ul>	No mention of gender	<p>“The objective of the PPCR-Bolivia Phase 1 is to strengthen (and build up in some cases) the basis for the implementation of specific pilot actions in order <b>to reduce social, economical and environmental vulnerability to climate change</b>, including actions to incorporate climate change in the planning process, in the investment system and public management, assigning resources for climate resilience at national, sectoral, and territorial levels.”</p>

		<p>resilience.</p> <ul style="list-style-type: none"> <li>□ Diagnosis of the institutional framework, identifying the strengthening needs of institutional capacities, management and coordination mechanisms.</li> <li>□ Memoir of the plurinational meetings to face climate change with the delegates of all levels of the Executive Body and a broad participation of private sector, indigenous peoples, local communities other vulnerable social groups and stake holders.</li> </ul>		
Cambodia	<p><b>SEA to be carried out for Strategic Program for Climate Resilience to be financed in Phase 2.</b></p> <p>A Strategic Environmental and Social Assessment with terms of reference acceptable to IBRD/IDA, ADB and the PPCR Development partners would be prepared which would systematically screen and scope out the proposed policies, programs and projects and review their environmental and social sustainability.</p>	<p><b>SEA to be carried out for Strategic Program for Climate Resilience to be financed in Phase 2.</b></p> <p><b>Participatory process followed during joint mission to confirm priorities:</b></p> <p>“At the provincial level, the mission held discussions with local leaders as well as staff of key line agencies. At a commune level, consultations were held with a Commune Council. These various consultations confirmed that the priority vulnerable sectors or themes for Cambodia that could be addressed by the PPCR are agriculture, water resources, and rural infrastructure.”</p> <p><b>Specific component to:</b> strengthen civil society and private sector engagement and gender considerations in climate change adaptation</p> <p><b>Institutional mechanism proposed which should help to establish a platform for dialogue on CC beyond PPCR program, based on emerging network in country (as identified during joint mission):</b></p> <p>“...undertook small group and one-on-one meetings with representatives from key local and international Civil Society Organisations (CSO) engaged in climate change related activities in Cambodia. During the initial consultation, it was clear that despite limited awareness and capacity to address climate change issues in CSO programs, coordination mechanisms on climate change were emerging - notably with the establishment of an NGO Climate Change Network. The follow-on consultations were designed to elucidate the mechanism and approach for CSO engagement and inform the design of a CSO support facility.”</p> <p><b>Application of participatory approaches:</b>  <i>Vulnerability baselines and participatory assessments for climate change impacts on key selected sectors are nearing completion.</i>  The Second National Communication Team has completed a climate analysis covering:</p>	<p><b>Gender highlighted:</b>  In 2009, MoWA and UNDP assisted MoE to develop its GMAP for the environment sector that includes climate change. So far 11 ministries have either completed or are in the process of developing GMAPs. The implementation of the GMAPs has so far been constrained by difficulty in mobilizing resources from Government and donors for its implementation. PPCR could support the GMAP strategy to ensure that both gender and climate risk management are mainstreamed into sectoral planning simultaneously.</p> <p><b>Gender pilots to be financed:</b>  Development of approaches for integrating gender concerns in climate change adaptation (through 3 pilot projects, to be determined).</p> <p><b>Gender highlighted as outcome:</b>  Strengthened engagement of civil society (including women, youth, senior citizens, indigenous groups, NGOs, the media and academia) and the private sector in the</p>	<p><b>Priority sectors based on GDP contribution and based on analysis already carried out in Mekong Commission reports.</b></p>

		<p>(i) trend analysis to assess the presence of significant trend in historical climate data, (ii) the development of climate change scenarios, and (iii) the development of a model for generating daily climate data from monthly ones. The impacts of climate change on <i>agriculture</i> were examined with a focus on rice production using the following parameters: change of yields, rice consumption by province, projected rice consumption per capita (scenario development), planting index by province, rice cultivated areas by province in wet season (WS) and dry season (DS), yield of WS and DS, percentage growth of cultivated areas of WS and DS and percentage yield growth in WS and DS. Initial results show that the onset of the rainy season may be delayed and that rice production in the wet season would be seriously affected. Further analysis on the impact of climate change on <i>water balance</i> in a number of watersheds has been done based on data from a KOICA project and other parameters, such as household water consumption per capita and agricultural water consumption per hectare. For the <i>health sector</i>, the SNC Team has used the results of a study conducted by the World Health Organisation (WHO) with the Ministry of Health as part of WHO's project entitled Regional Framework for Action to Protect Human Health from Effects of Climate Change in the Asia-Pacific Region. The SNC Team has assessed the impact of climate change on soil water regime or dryness and its potential influence on <i>forest</i> productivity or forest fire risk. For the <i>coastal zone</i>, the analysis included not only the impact of sea level rise but also the impact of high tide or extreme wave on coastal infrastructure. Micro-economic analysis of the impact of extreme weather events (floods and droughts) on crops, households, water supply, fisheries, manufacturing and gender considerations has been carried out for Prey Veng (the most vulnerable rice growing province), Battambang (the second most vulnerable rice growing province) and Kampot (coastal zone). Reports detailing the above analytical outputs are expected to be finalized during 2010.</p> <p><b>Emphasis on establishing baseline with respect to awareness and attitudes, as well as to exploring ways of raising awareness:</b> Responding to the need for data, the CCD with the support of UNDP and Oxfam America has commissioned a nationwide Knowledge, Attitudes and Practices (KAP) survey to establish what different groups of society know, understand</p>	<p>climate change adaptation agenda, while considering and addressing gender disparities thereby broadening awareness of climate risks and increasing participation of a broad group of stakeholders.</p>	
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		and already do to address climate change. This study will establish a baseline and will also assess media consumption patterns and identify the most effective communication channels for different urban and rural populations with regards to climate change adaptation.		
Mozambique	<b>Proposal emphasizes SEA to be conducted of strategic program.</b>	<p><b>Proposal emphasizes participatory approaches and SEA of Strategic program in carrying out Phase I work:</b> <i>Consultation process and Strategic Environmental and Social Impact Assessment of SPCR.</i></p> <p>Extensive consultative processes had already been undertaken in previous climate-related analytical and capacity building work, such as the INGC study, the INGC phase II and the AAP. Therefore, it is proposed to finance a strategic environmental and social impact assessment (SESIA) of the overall planned program, including alternatives in the three pilot poles, with consultations at the local level. .</p> <p>Consultations will include CSOs and community groups, local and provincial, public and private stakeholders. (Such consultative processes are relatively well established in Mozambique)</p> <p><b>Proposal emphasizes socio-economic assessments in three pilot areas (“poles”) where investments are to be financed:</b> The SPCR will undertake a detailed analysis of key vulnerabilities to economy and society in the Limpopo watershed and Zambezi valley and a detailed assessment of vulnerability in key coastal towns, focusing initially on Beira but also on alternative sites if appropriate (Maputo and Nacala), and a socio economic assessment (building on ongoing work) in each of the three poles.</p> <p><b>Joint Mission carried out consultations and makes reference to knowledge and awareness raising:</b> “It appeared clearly in the consultations undertaken during the first joint mission that the civil society and the private sectors needed more information about climate risks. The INGC phase II propose, in its steady track (2010 and 2011), to finance training of media with a focus on radio and TV. There was consensus that further Knowledge and Awareness Raising activities were not necessary at this stage but that the SPCR would undertake” socio-economic studies as mentioned above.</p>	<p><b>Attempt to establish better understanding of gender and climate adaptation:</b> Separate analyses would identify the more detailed work to be undertaken in phase 2 in hitherto relatively less studied areas such as health, and impact on gender. Proposal also notes that: “By proposing to invest in climate resilient activities in the agriculture sectors in the Limpopo watershed and in the Zambezi valley, SPCR would nonetheless be gender sensitive as 2/3 of the farmers are women.”</p>	<p><b>Key Results:</b></p> <ul style="list-style-type: none"> <li>-Climate vulnerability assessment of the next Five Year Development Plan, and identification of capacity building needs in MPD/MICOA and in key line ministries (transport, agriculture, water).</li> <li>-Coastal cities vulnerability study</li> <li>-In the three poles (Zambezi basin where the main risks are both floods and droughts, the Limpopo watershed where the main risk is drought, and the coastal Town of Beira or possibly an alternative vulnerable coastal town), institutional assessment and public expenditures review.</li> <li>-In the three poles, socio economic assessment and sectors’ vulnerabilities studies and definition of climate resilience activities, including strengthening hydro metrological stations</li> <li>-Sector analyses of risks and barriers to adaptation to ports, urban water, tourism and forestry and identification of priority needs in these sectors, and initial scoping on health and gender.</li> <li>-Strategic Environmental and Social Environmental Assessment (SESIA) of the SPCR investment plan</li> </ul>

Tajikistan	Sectors mentioned include land management	<p><b>Proposal notes that:</b> Attention will be given to the adverse effect of climate change to socio and economic development and poverty eradication, examining the role of local institutions, “indigenous” knowledge on adaptation to recent climate variability, as well as the role of women in contributing to livelihood strategies adapted to changing climatic and environmental conditions.</p> <p><b>Component on “raising awareness of climate change in Tajikistan”. However outcomes of this seem to be focused on raising awareness in select group, rather than a broad-based effort:</b>  <i>“Expected outputs may include:</i>  - Seminars for national policy makers on the international climate change regime and different aspects of climate change impacts, vulnerability and adaptation;  - Workshops on the impacts of climate change on and adaptation responses for key sectors and line ministries, including energy, agriculture, food security, health and disaster risk management;  - Seminars for local policy makers on climate change in Tajikistan, likely impacts and risks, and potential adaptation responses at the local level, with particular focus on the needs of rural and urban communities;  - Seminars for academics and young scientists on the current status of knowledge of climate change science, impacts and adaptation.  - A small number of trained Tajik experts able to carry out awareness raising activities.”</p> <p><b>Participatory frameworks emphasized, but no details are available in proposal how this will be done or applied in the activities to be financed:</b> For example, proposal notes that priorities for the SPCR include empowering vulnerable groups, particularly the rural poor, women, youth and indigenous groups through a participatory framework at a project-level and ensuring consideration of the needs and participation of vulnerable groups, particularly the rural poor, women, children and minority groups at a local and community-level.</p>	<p><b>Women emphasized in different ways in proposal.</b> See statement on left.  <b>Impacts of climate change on women highlighted:</b>  Women and children are particularly vulnerable to the effects of climate change in Tajikistan. They constitute the majority of the country’s poor, are often charged with the responsibility to secure water, food and fuel for cooking and heating in Tajikistan’s rural areas and are dependent for their livelihood on natural resources that are threatened by climate change. Despite women’s responsibilities in households and communities and their expertise positions them well to contribute to livelihood strategies adapted to changing climatic conditions, they face social, economic and political barriers that limit their coping capacity.</p> <p><b>Linkages between sustainable land management and women highlighted:</b>  In Tajikistan the feminisation of poverty is a serious concern and female-headed households control lesser resources to practise sustainable management of land, making SLM a critical issue in tackling gender inequality and disempowerment.</p> <p><b>Participatory</b></p>
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			<b>frameworks emphasized as way of tackling gender.</b> See on left.	
Yemen	<p><b>A Strategic Environmental and Social Assessment of the SPCR is noted as an output to be carried out under the Phase 1 proposal.</b> As this Strategic Framework for Climate Resilience is assembled jointly by development partners, it would be subject to a <b>Strategic Environmental and Social Assessment (SESA)</b> funded under the PPCR-Phase I, with terms of reference satisfactory to IDA and other key PPCR development partners. The SESA would systematically screen and scope out the proposed policies, programs and projects and review their environmental and social sustainability. In particular, the SESA would:</p> <ul style="list-style-type: none"> <li>• Describe the proposed policy, program or project's scope, boundary, and key assets/population affected</li> <li>• Identify, predict and evaluate potential impacts</li> <li>• Recommend preferred alternatives</li> <li>• Identify the safeguard risks and policies likely to be triggered by the investment</li> <li>• Suggest monitoring and mitigations measures</li> </ul>	<p><b>Two out of four PPCR objectives include:</b></p> <ul style="list-style-type: none"> <li>-Target the vulnerable stakeholders and communities especially women who are disproportionately affected by climate change.</li> <li>-Raise awareness and strengthen capacity to deal with climate change in government, the private sector, local communities and civil society groups.</li> </ul> <p><b>First pillar of SPCR preparation emphasizes information and awareness raising.</b> As part of the information, there is reference to "a rapid multi-risk assessment to identify vulnerable areas and communities for identification of pilot investments (under Pillar IV)." With respect to general awareness raising, techniques such as "website, or wiki for information entry and dissemination, workshops and seminars" are emphasized. Outputs include: Public awareness and outreach multi-media training material prepared and available for use. Projected outcomes include: Improved public awareness regarding climate and other risks.</p> <p><b>A Strategic Environmental and Social Assessment of the SPCR</b> is noted as an output to be carried out under the Phase 1 proposal. <b>The SPCR would also be formulated conducting "participatory multi stakeholder consultations"</b> "Consultations on the findings and specific propositions related to institutional rearrangements and reforms are critical. Recommendations will be targeted at various levels (e.g. rapid capacity building, medium- to long-term capacity needs and enhanced mandates to incorporate climate aspects). Furthermore, local Yemeni knowledge of local communities will perpetually exceed Bank or EPA knowledge and, therefore, discussions and awareness-raising during workshops with them are critical to the success of the PPCR. Workshops with involved stakeholders (i.e., local organizations and civil society groups) will raise awareness and help such stakeholders to understand the motivations behind projects proposed by the EPA. Each community can use the information presented in the workshops to create its own individualized solutions to the negative effects of climate change. There will be active involvement of each affected community during all-inclusive stakeholder consultations.</p> <p>Reaching out to all relevant stakeholders</p>	<p><b>Women mentioned in objectives.</b> See on left.</p> <p><b>Women mentioned as part of the key development challenges:</b></p> <ul style="list-style-type: none"> <li>•Reduced female education due to increases in water transport duties</li> </ul>	

		<p>and improving their understanding of climate change risks and vulnerabilities through group discussions and the active involvement of communities and civil society are a pre-requisite for the successful implementation of the PPCR. For example, in the water sector some of the awareness-raising activities could include elaboration on the IWRM approach with active participation from all relevant institutions, especially MAI, NWRA, and the rural and urban water supply and sanitation sectors. This would instill a better sense of water resources development and management, rural and urban interfacing in terms of sharing responsibility to develop, and resource management at the basin scale.”</p> <p><b>References to consultation during Phase 1 Proposal preparation are made:</b> The EPA as the Technical Secretariat of the PPCR has worked to ensure that the development of the Phase I proposal benefitted from both bottom-up and top-down consultation processes. While the continued guidance, engagement, and commitment from the IMCCC has been instrumental in nurturing, sustained and high level ownership of the PPCR process, the rich feedback from consultations with civil society, women’s groups, media, academia, local government, line agencies and other stakeholders were very productive in highlighting the challenges of dealing with environmental, development and climate challenges from these various perspectives.</p> <p><b>Direct involvement of civil society organizations (CSOs), including gender groups, as implementation partners.</b> There was repeated mention during the PPCR consultations and missions that the rural poor (farmers, fishers, etc.) and women are highly impacted by climate change and other adverse environmental impacts. There was a sense of frustrations from the representatives that CSOs that the poor and marginalized are often consulted in processes, but are subsequently not direct recipients and/or beneficiaries of projects or programs. These constituencies reflected specific needs for capacity and information, but also felt that they brought important local and traditional knowledge that could be an important part of solutions, and there should be a way for them to be more directly a part of the implementation process of the PPCR (see proposed Building Block 2 under Phase II).</p> <p><b>Very preliminary Phase 2 building blocks are mentioned that could include an innovative approach to engaging CSOs</b></p>		
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		<p><b>as champions:</b> “Some of the critical building blocks that could be anticipated under Phase II are provided below. However, this should be treated as very preliminary, based on the current state of discussion, consultation and feedback, and may be subject to considerable adjustments during the preparatory Phase I.” These include <b>“Building Block 2: Pilot Innovations to Reduce Social Vulnerability and Engaging CSOs as Champions and Agents for Climate Change.”</b> This activity will have a three-fold objective: (i) engage CSO (including gender groups) directly as “agents and champions of climate change” and to build sustained capacity and awareness of climate issues on the ground; (ii) identify and implement in a participatory way priority pilot interventions based on local knowledge and/or innovations that would also reduce social vulnerability to climate and other related risks; and (iii) test successful bottom-up interventions for scale-up for through the larger PPCR investments (or other means). It is proposed to have an equivalent of national level “Yemen Climate Adaptation Marketplace” which will solicit request for proposals (for up to \$120K) each 6 months as a rolling program for about 2 years. Selection of top 10 proposals will be done (3 months after initial announcement) by an independent panel. The program will raise matching funds for this program from other donors and development partners. Such a component will address the repeated feedback during the consultations of exclusion of the very stakeholders who are most impacted, and who have much to offer.”</p> <p><b>Joint mission also consulted widely:</b> “Following the two-day workshop, the EPA, the World Bank, and UNDP co-hosted a half-day stakeholder consultation attended by over 52 members of academia, NGOs, corporations, and other civil society groups.” “Civil society groups generally identified four key actions for the PPCR to undertake throughout its duration:</p> <ol style="list-style-type: none"> <li>1. Involve and communicate with NGOs, civil society, the private sector, academia, and related government agencies in the information collection and analysis process, and use local knowledge to supplement scientific data;</li> <li>2. Coordinate with the above groups during the formulation of PPCR documentation and implementation of PPCR projects;</li> <li>3. Raise awareness on the effects of climate change and provide guidelines for action at local and national levels;</li> </ol>		
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		4. Increase the capacity of the above groups to encourage action at local and national levels.”		
Zambia	<b>Extensive analysis of link with ENRM by government.</b>	<p><b>Participatory approaches underway in on-going work:</b> <i>Vulnerability baseline and participatory assessments are on-going.</i> Several institutions carried out vulnerability and adaptation (V&amp;A) assessments, particularly in the Zambezi River Basin and on pilot project areas on Region I. Participatory vulnerability assessments were completed on Eastern and Southern Provinces using focused group discussions, household interviews, and expert opinion.</p> <p><b>Proposal notes level of general awareness on climate change:</b> <i>Even though the analysis has been solid, decision makers and the general public seem poorly informed about climate change impacts and adaptation strategies.</i> PPCR stakeholders stressed the need to inform policy makers in key sectors, the private sector, community leaders, the media and legislators with simple messages, possibly modeled on the clarity of the HIV/AIDS campaign.</p> <p><b>Component on awareness-raising included in proposal, but emphasis is on policy makers and select groups.</b> “Longer term awareness and communication” is left for Phase 2.</p> <p><b>Pilot investment will also be identified in Phase 1 for Phase 2 within a pre-identified area (Zambezi) applying the following criteria.</b> “The pilot SPCR would focus on priority areas in Western and Southern part of Zambia within the Zambezi River Basin. Within the basin, priority project areas should be identified based on:</p> <ol style="list-style-type: none"> <li>1. “Win-win” criteria (highest probability of success, high local commitment, access, etc.)</li> <li>2. High vulnerability (as revealed by sectoral and regional vulnerability indices).</li> <li>3. Complementarity vis-à-vis other funding/development efforts.”</li> </ol> <p>It is also noted that: “To the extent possible, integrated planning should be promoted to encourage local adaptive response, both in soft adaptation measures (sustainable agriculture production and ecosystems) as well as in hard, engineering solutions (climate resilient infrastructure) - while at the same time providing local communities with the support and knowledge needed to adapt to climate change.”</p> <p><b>Extensive consultative process followed</b></p>	<b>Gender is not mentioned in proposal.</b>	<b>Reaching National Vision 2030 strategic goals will require climate-proofing key sectors, particularly agriculture, infrastructure, energy, environment and natural resources.</b> Under the Fifth National Development Plan (2006-2010), a first attempt was made to mainstream environment and climate change into the planning process. This approach was not yet comprehensive as only the agriculture and energy sectors were covered under climate change adaptation. Under the Medium Term Expenditure Framework and 2010 Budget, key sectors like Agriculture, Forestry, Fisheries and Environment were found to dedicate less than 25 percent of their budget to programs considered to be climate resilient. For some sectors, the proportion was less than 5 percent

		<p><b>to prepare Phase 1 Proposal is detailed:</b></p> <p>Minutes from joint mission meeting with CSOs notes, among other points, that “-The Civil Society expressed the need for them to be involved in identifying the investment/priority areas for Phase II. They recognized that there is a direct link between what they were doing and adaptation – and example of the Rain Water Harvesting Association was given.</p> <p>-Regarding the selection of the pilot site, the CSOs were of the view that instead of the Zambezi river basin, the pilot area should be determined by an eco-system as it would be more representative. They suggested the Miombo Eco-region (system). This suggestion would tie in with the development of a resilience strategy for the whole of Zambia as the effects of climate change are country wide (migration, socio-economic impact).”</p>		
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