



Monique Barbut
Chief Executive Officer
and Chairperson

Global Environment Facility

1818 H Street, NW
Washington, DC 20433 USA
Tel: 202.473.3202
Fax: 202.522.3240/3245
E-mail: mbarbut@TheGEF.org

August 18, 2009

Dear LDCF/SCCF Council Member:

The UNEP as the Implementing Agency for the project entitled, *Global: Technology Needs Assessments*, has submitted the attached proposed project document for CEO endorsement prior to final Agency approval of the project document in accordance with the UNEP procedures.

The Secretariat has reviewed the project document. It is consistent with the project concept approved by the LDCF/SCCF Council in April 2009 and the proposed project remains consistent with the Instrument and SCCF/GEF policies and procedures. The attached explanation prepared by the UNEP satisfactorily details how Council's comments have been addressed.

We have today posted the proposed project document on the GEF website at www.TheGEF.org for your information. We would welcome any comments you may wish to provide by September 15, 2009 before I endorse the project. You may send your comments to gcoordination@TheGEF.org.

If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Attachment: Project Document

cc: Alternates, GEF Agencies, STAP, Trustee



REQUEST FOR CEO ENDORSEMENT/APPROVAL
PROJECT TYPE: FSP
THE SPECIAL CLIMATE CHANGE FUND

Submission Date: August 14, 2009

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID¹: 3907 **PROJECT DURATION:** 30 months
GEF AGENCY PROJECT ID:
COUNTRY(IES): Global
PROJECT TITLE: Technology Needs Assessments
GEF AGENCY(IES): UNEP
OTHER EXECUTING PARTNER(S): UNEP-DTIE WITH UNEP
 RISOE CENTRE (URC), REGIONAL CENTERS, NATIONAL PARTNERS
GEF FOCAL AREA (S)²: Climate Change
GEF-4 STRATEGIC PROGRAM(S): Special Climate Change Fund –
 Technology Transfer
 Name of parent program/umbrella project:

INDICATIVE CALENDAR*	
Milestones	Expected Dates mm/dd/yyyy
Work Program (for FSP)	April 2009
CEO Endorsement/Approval	Aug 2009
Agency Approval Date	Oct 2009
Implementation Start	Nov 2009
Project Closing Date	Apr 2012

* See guidelines for definition of milestones.

Project framework

Project Objective: As part of the GEF Strategic Programme on Technology Transfer, the project will provide targeted financial and technical support that assists developing countries in carrying out improved Technology Needs Assessments (TNA) within the framework of Article 4.5 of the UNFCCC. The intention is that assisted countries go beyond identifying technology needs narrowly and develop national technology action plans for prioritized technologies that reduce greenhouse gas emissions, support adaptation to climate change, and are consistent with national development objectives.

Project Components	Indicate whether Investment, TA, or STA ^b	Expected Outcomes	Expected Outputs	Indicative GEF Financing ^a		Indicative Co-Financing ^a		Total (\$) c = a + b
				(\$) a	%	(\$) b	%	
1. Support the development of Technology Needs Assessments in 35-45 developing countries or, where these have already been prepared, their strengthening to make them more strategic and useful in an operational sense.	STA	Supported countries have: developed a national consensus on priority technologies, agreed on a technology action plan compatible with Nationally Appropriate Mitigation Actions or similar exercises, established an institutional structure for overseeing implementation, and developed capabilities to revise or adapt the plan as needed.	New or in some cases updated / strengthened TNAs in 35 to 45 countries that 1) prioritize technologies on the basis of cost effectiveness, fit with national development priorities, and other criteria, 2) identified barriers and means to overcome them 3) provide a Technology Action Plan comprising targeted actions for creating an enabling framework 4) Suggestions for future revisions to the TNA handbook, based on practical experience gained in undertaking TNAs.	7,063,017	77	2,090,000	23	9,153,017

¹ Project ID number will be assigned by GEFSEC.

² Select only those focal areas from which GEF financing is requested.

2. Development of tools and provision of technology information that supports preparation of TNAs	TA	Methodology for identifying mitigation technologies and technologies for adaptation most appropriate for national circumstances available for use by developing countries. - Participating countries able to access technology databases.	Mechanism for providing technology information critical to undertaking TNAs established. - Information on policies and measures and barrier removal approaches - Methodologies for conducting market assessments - Capacity building workshops on various tools - etc.	776,807	52	705,000	47	1,481,807
3. Establishment of a cooperation mechanism that aids preparation and refinement of TNAs through sharing of experience and that fosters implementation of identified measures	TA	Increased national and interregional cooperation on technology transfer as a means of facilitating the preparation of TNAs	Networking mechanisms established Proven approaches disseminated globally Replication approach available	341,994	85	60,000	15	401,994
Total project costs				8,181,818	74	2,855,000	26	11,036,818

^a List the \$ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.

^b TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. SOURCE OF CONFIRMED Co-financing FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, (\$)

Sources of Co-financing	Type of Co-financing	Project
Project Government Contribution	In kind	2,000,000 (between 50,000 and 100,000 per participating country)
GEF Agency(ies) (TMA (Norway))	In cash*	705,000
GEF Agency UNEP	In kind**	150,000 (140,000 for project management cost and 10,000 for PSC meetings)
Bilateral Aid Agency(ies)		
Multilateral Agency(ies)		
Others		
Total Co-financing		2,855,000

*Norway has entrusted UNEP with the indicated amount to carry out technology transfer support and UNEP is using these funds to further improve financing and corresponding quality of the present initiative.

** UNEP is also supporting the present initiative with high level expertise and back stopping, related to project management.

C. CONFIRMED FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	Previous Project Preparation Amount (a) ³	Project (b)	Total c = a + b	Agency Fee
GEF financing	0	8,181,818	8,181,818	818,182
Co-financing	0	2,855,000	2,855,000	
Total	0	11,036,818	11,036,818	818,182

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)¹

GEF Agency	Focal Area	Country Name/ Global	(in \$)		
			Project (a)	Agency Fee (b) ²	Total c=a+b
UNEP	SCCF	Global	8,181,818	818,182	9,000,000
Total GEF Resources			8,181,818	818,182	9,000,000

¹ No need to provide information for this table if it is a single focal area, single country, and single GEF Agency project.

² Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

D. FOR MULTI AGENCIES/COUNTRIES (IN \$)¹

GEF Agency	Country Name	(in \$)		
		Project (a)	Agency Fee (b) ²	Total (c) c=a+b
Total SCCF Resources		0	0	0

¹ No need to provide information for this table if it is a single country and/or single GEF Agency project.

² Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

³ Include project preparation funds that were previously approved but exclude PPGs that are waiting for approval.

E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS

<i>Component</i>	<i>Estimated person weeks</i>	<i>SCCF(\$)</i>	<i>Co-financing (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	840	912,000	0	912,000
<i>Internationally recruited consultants*</i>	179	659,000	0	659,000
Total	1,019	1,571,000	0,000	1,571,000

* Local consultants are hired directly under national budgets provided to participating countries. This is indicative only and if needed, countries may hire more consultants (from their budget) for other activities such as project management, organizing training and workshops etc.

Consultants recruited internationally will directly be financed by the global component of the present initiative. UNEP will strive to associate local and regional consultants to the TNA initiative through international recruiting. Out of the internationally recruited consultant budget, 62% will be used to support countries. Overall as far as consultants budget is concerned, 84% of the budget will be used to support TNA processes in country. Details provided in Annex A

F. DESCRIBE THE BUDGETED M&E PLAN:

The project will follow all standard UNEP/GEF procedures for monitoring and reporting which are valid for SCCF financed projects. This includes yearly reporting to the GEF and an end of project evaluation. The Project Management Team will closely monitor the indicators for outputs and outcomes against the Logical Framework (see Annex B).

The M&E plan (see Annex C) will be reviewed at Project Steering Committee (PSC) at the outset of project operations. This plan outlines the monitoring and verification activities and responsibilities to be undertaken during the project. It serves as a baseline from upon which to measure impacts and will also establish efficiencies in the execution of the project.

The M&E Plan will be discussed and finalized to be included in Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of M&E responsibilities of the Project executing and implementing agencies.

Project architecture securing project monitoring

The TNA initiative is designed to support TNA processes at the national level, comprising of an assessment of Technology Needs for mitigation and adaptation (TNA) and a technology action plan (TAP) which encompasses the development of an enabling framework for technology transfer and diffusion through barrier identification and removal strategies. TNA and TAP are carried out at country level with support from international / regional consultants, wherever needed. Hence division of roles and responsibilities is designed to secure high quality support to countries and effective capacity building at country and regional level. Project monitoring and impact evaluation will be carried out on an ongoing basis.

A Project Steering Committee (PSC) is composed of a member of the GEF Secretariat, a member of the EGTT a member of the UNFCCC TT Clear, UNEP, UNDP, the World Bank and UNIDO. UNEP Risoe Centre represented by the project manager will also participate without right to vote. The PSC chaired by UNEP will provide strategic guidance on issues such as country selection and technology orientation coordination with relevant initiatives of other agencies and with the other components of the Poznan Strategic Program on Technology Transfer referred to it by the Project Management Committee. The Project Implementation Unit (PIU) which will serve as the secretariat of the PSC, will provide to the PSC annual overview of progress of project implementation. The PSC will provide guidance to the PIU based

on information given to it. The PSC will be involved in selection of countries based on the advice of the PMC and the criteria set out in the project document. The PSC will meet once a year and can be called as needs via telecon. The project will cover costs of PSC attendance of country representatives.

Project Management Committee (PMC) composed of UNEP/DGEF, UNEP/DTIE and UNEP Risoe Centre would work to provide project management and implementation guidance consistent with their respective roles of the Implementing and Executing Agency of the project. The PMC will be responsible for oversight of project management and delivery of the coming years work. To provide oversight the PMC will need to receive and assess feedback from the countries on quality of support received from the international experts and regional centers and quality of the TNAs and TAPs produced by national teams. The PIU will organize independent questionnaires for completion by country teams on their needs and observation for support; as well as the result of the TNA and TAP quality reviews, and ensure that these are fed directly back to the PMC. The PMC will meet first with PIU to review project progress and plans. Based on results of questionnaires, quality of review and other information, the PMC will agree on the coming years workplan and budget. The PMC will also advise the PSC on country selection.

UNEP/DGEF shall in its role as GEF Implementing Agency, provide project oversight to ensure that GEF policies and criteria are adhered to and that the project meets its objectives and achieves expected outcomes in an efficient and effective manner. Project supervision is entrusted to the Director of DGEF who discharges this responsibility through the assigned Task Manager who represents the Director of DGEF on the project steering committee. Project supervision missions by the Task Manager and/or Fund Management Officer shall constitute part of the project supervision plan. UNEP/DGEF would perform the liaison function between UNEP and the GEF Secretariat and report on the progress against milestones outlined in the CEO approval letter to the GEF Secretariat. UNEP/DGEF shall inform the GEF Secretariat whenever there is a potentially substantive co-financing change (i.e. one affecting the project objectives, the underlying concept, scale, scope, strategic priority, conformity with GEF criteria, likelihood of project success, or outcome of the project). It shall rate, on an annual basis, progress in meeting project objectives, project implementation progress, risk, and quality of project monitoring and evaluation, and report to the GEF Secretariat through the Project Implementation Review (PIR) report prepared by UNEP/RISOE. UNEP/DTIE will ensure, UNEP/RISOE liaises with all countries in the project in preparing and rating the annual PIR. DGEF will also ensure that the Evaluation and Oversight Unit of UNEP arranges for an independent terminal evaluation and submits its report to the GEF Evaluation Office.

UNEP/DTIE shall take responsibility for the execution of the project in accordance with the objectives, activities and budget and deliver the outputs and demonstrate its best efforts in achieving the project outcomes. It shall also address and rectify any issues raised by DGEF with respect to project execution in a timely manner. It shall also support the project mid-term review as an adaptive management tool and develop a management response to the review. UNEP/DTIE shall collaborate with the project terminal evaluation, and provide all information requested by the evaluation team. For a multi-country project such as the global TNA project, it shall inform UNEP/DGEF in the event that one or more countries withdraw from the project. DGEF shall in turn notify the GEF Secretariat.

The URC is the main UNEP partner and shall together with the UNEP DTIE constitute the Project Implementation Unit (PIU). It hosts the Project Team, provides high level technical inputs and organizes the tasks at global level as well as securing capacity building of regional and national bodies. The project team also serves as secretariat to the PMC and PSC.

Regional Centers are recipient of project training to builds their capacity during the first half of the project to become providers of support to national teams on an increasing basis. The project provides financial support to regional centers to fulfill this aim. The country teams are carrying out TNAs and TAPs at

national level and to this end, receive technical support from the global and later regional project teams. Financial support is provided to the country teams by the project.

Project Inception Phase

Two project inception workshops would be conducted. The first one will involve fifteen participating countries in an initial stage of the project as well as other potentially interested stakeholders as they have been identified in the relevant sections of the project document. It will either take place on the premises of UNEP/DTIE in Paris, France or UNEP Risoe Centre (URC) in Denmark or in one of the participating countries where technology experts and providers can meet.

The purpose and objective of the Inception Workshop (IW) will be to: (i) introduce the key actors to each other; (ii) detail the roles, support services and complementary responsibilities of each stakeholder (iii) provide a detailed overview of the SCCF reporting and monitoring and evaluation requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the participating entities on the project's financial management issues.

It will also set the opportunity to fine-tune the definition and exact content of the various activities as presented in the project's logical framework matrix (logframe). This will include reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalize the first Annual Work Plans (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the global project. A second workshop covering the issues outlined above will be conducted when the project is launched in the remaining countries at the end of the first year of project implementation.

The Inception Report for the overall project, by building on the outcome of the Inception Workshop, will be prepared by the UNEP-Risoe Centre Project Implementation Unit (PIU) and submitted to UNEP/DGEF as the IA of the project.

Independent Evaluations

As per GEF requirement, an independent Final Evaluation will take place before the preparation of the terminal report and will focus on the achievement of the initiative and the quality of support provided to the countries carrying out their TNAs and TAPs. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNEP Monitoring and Evaluation Office in Nairobi, in consultation with UNEP DGEF and UNEP DTIE.

Information and Knowledge Sharing

Exchange of information and knowledge sharing is built into project design and an integral part of component 3. In effect this aspect is the core of the present revised approach to technology transfer. The lessons to be learned from the project will be disseminated through a wide range of media to a number of target groups and beneficiaries to ensure that maximum benefit can be gained. The progress and results of these activities will be regularly available through hard copy and the project website to be managed by the UNEP Risoe Centre as well as the website of UNEP/DGEF. A publication addressing the best practices and lessons learned will also be produced, making sure that any experience gained can be shared across technology related institutions in supported countries. It will also serve as a basis for recommendation to revise the TNA handbook.

In addition, the project will participate, as relevant and appropriate, in UNEP-sponsored networks, organized for senior personnel working on projects that share common characteristics. Finally, the project

will identify and participate, as relevant and appropriate, in scientific, policy-based, climate related technology based and/or any other networks, which may be of benefit to project implementation through lessons learned and where the project can make a contribution. Experiences and lessons learned during the lifetime of the project will be presented at COPs of the UNFCCC through the TT Clear network and EGTT events and other relevant meetings.

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

General context

The accelerated adoption of advanced technologies in developing countries is now recognized as essential to both achieving the global goal of reducing emission of greenhouse gases into the atmosphere and allowing those countries to adapt to the consequences of a changing climate. Using existing GEF-4 resources and the SCCF Program on Technology Transfer, a \$50 million funding portfolio, is established, devoted to scaling up investment in the transfer of Environmentally Sound Technologies activities. This element builds on the GEF's mandate, experience, and current network of technology transfer activities. This portfolio will help enable private and public climate-friendly investments and provide funding for innovative and highly leveraged projects. The portfolio priorities will be activities with multiple local and global benefits that contribute to private sector investment in, and financing of, technology transfer in developing countries.

The Technology Transfer Framework adopted by parties to the UNFCCC as part of the Marrakech Accords recognized the importance of so-called Technology Needs Assessments and funding was provided through the GEF to developing countries for conducting TNAs. Evaluation of the results revealed that with certain structural changes TNAs could be more useful in accelerating the diffusion in developing countries of both technologies for mitigation and adaptation. Support for enhanced TNAs was thus included in the GEF Strategic Programme on Technology Transfer approved by the GEF Council in November 2008.

The LDC/SCCF Council approved in November 2008 its strategy presented in the document: "Elaboration of a Strategic program to scale up the level of Investment in the Transfer of Environmentally Sound Technologies". This strategy paper was overwhelmingly endorsed by COP 14. It presents both an analysis of past TNAs experience, a definition of technology transfer including 5 spheres: 1) stakeholders consultation, 2) generation, and access to information, 3) securing an enabling environment for technology transfer to take place including technical, legal and regulatory aspects, 4) capacity building to develop, manage and adapt Environmentally Sound Technology based on technical, scientific and institutional skills, 5) financial access and support to financial institutions, and a vision for future TNA elaboration.

Given the ever changing nature of technology transfer processes, it is envisioned that a GEF strategy and support on technology transfer would be revised on an on-going basis. Guidance from the COP as well as cooperation with interested Parties, public and private-sector institutions, and representatives of the financial community, through an informal consultation process will be an important part to base revisions.

Improving and expanding support for conducting technology needs assessments (TNAs) is the object of the present project, including national technology action plans (TAPs), and allied activities. All of these assessment and planning activities, will help form a strong foundation for a strategic technology transfer program. TNAs, action plans, and allied activities can be sharpened in order to identify and prioritize national technology transfer activities to attract financial investment. Better matching projects with potential financial resources to implement the projects would be an immediate benefit of improved TNAs

and TAPs. Appropriate policies and financial instruments can be developed to address market challenges and opportunities. In many instances these efforts will be nationally focused, but scope should exist for regional and sectoral approaches where these match existing markets for ESTs or those that can be developed.

These activities should build upon existing efforts. For example, engagement of the private financial sector in helping realize these opportunities can be facilitated through the application of a model similar to the CTI's Private Financing Advisory Network (PFAN), where project developers in developing countries receive technical assistance and mentoring from financial professionals to gain access to private debt and equity markets.

Barriers like high costs of new technology and lack of access to finance, lack of awareness and access to technical information, inadequate or restrictive government policies and regulations, lack of institutions to promote and implement new technologies, and lack of skilled human resources can all hinder efforts to transfer technologies from one country to another. Addressing barriers in a holistic and complementary manner is necessary for leveraging technology investments and achieving more rapid diffusion of climate friendly technologies. The IPCC and the UNFCCC's Expert Group on Technology Transfer (EGTT) have noted that there is no single approach to enhancing technology transfer, and that the identification, analysis and means of overcoming barriers must therefore be country and/or technology specific.

Consistent with the above orientations, the project will, in 35 to 45 countries, support Technology Needs Assessments. The improved TNAs will comprise in-depth analysis and prioritization of technologies required by the countries and analysis of barriers that hinder the transfer of selected technologies. The systematic analysis of barriers will focus on identified technologies and the potential market opportunities that exist at the national level. On this basis, comprehensive national Technology Action Plans (TAPs) agreed by all stakeholders in the countries will be prepared that are consistent with both the domestic and global situations. The TAPs will describe essential elements of an enabling framework for technology transfer consisting of market development measures, institutional, regulatory and financial measures, and human and institutional capacity development requirements. Most importantly, a TAP will outline a detailed plan of action to implement the proposed policy measures in the country, and estimate the need for external assistance to cover additional implementation costs (Component 1).

Specific training and supporting materials will be developed and tested for key areas, including development of methodology for prioritization of technologies, market assessment, access and links to data on technologies and shared with all other countries (Component 2).

The experiences will be shared between participating countries during the project to enhance cross country learning, and with other countries in the various project regions through workshops and information networks, including the UNFCCC's TT Clear. The project will use and provide feedback to fine tune methodologies and to modify the revised TNA Handbook through an iterative process involving the national project partners and regional centers of excellence (Component 3).

Barriers hampering the elaboration of high quality TNAs

Barriers relating to insufficient institutional coordination at national level

In most countries, TNAs were financed as add-on and have been hosted by the relevant national ministry in charge of National Communications. While the preparation of National Communications require a wide stakeholder consultation process, the process is mainly driven by public sector actors. The very nature of technology transfer would require the active involvement of private actors, as well as private and public research centers. Furthermore, in some cases, and for some technologies, specific foreign providers should

also be consulted. The TNAs were of relatively small size and hence did not always allow to carry out the consultation exercise thoroughly.

Barriers relating to the definition of technology transfer

The term technology transfer can be understood at various levels. EGTT experts have a broad conception of technology transfer securing the effective transfer and integration of a technology into the national context, thus including capacity building, finance, information and institutional capacity. Private actors in GEF beneficiary countries, who are often the main drivers for technology transfer and whose opinion would be beneficial for the TNA process, have a more narrow conception of technology transfer, excluding most soft items, with maybe the exception of transfer of know how to operate and maintain, and in some cases produce or adapt a given technology. At the end of the day, a matrix representing various types of technologies to be transferred and the conditions to be met for an effective transfer, would look quite complex. With little time, little guidance for project executions, and multiple priorities, the clear definition of technology transfer was not always captured. If associated, private actors often did not understand the scope or purpose of TNAs

Barriers relating to the lack of easily accessible information on hard technologies

While information on technology does exist, it is often scattered and does not provide the overall vision in terms of cost, performance under national conditions, property rights, options for transfer of technology, know how, licensing, and financial packages or legal, fiscal, regulatory, safety and property related requirements or new development that can affect positively performance, etc. As a result, the lists of technologies identified by countries only referenced generic technologies or those already transferred though not always at big scale.

Lack of an agreed upon methodology for prioritization

While it is agreeable that technology transfer, either for mitigation or for adaptation, is country specific, there is a lack of clear methodology for a given country to choose its own prioritized technologies, and take necessary step to promote adequate transfer of technology. The multidimensional aspect of adequacy, including local resources, local issues related to social or economic conditions, local availability of expertise, consistency with national development planning, cost, marginal abatement curves, financing capacity, etc. calls for a methodology and associated tools for prioritization. The first round of TNAs were not based on such a clear, agreed upon, prioritization methodology, hence they seldom captured the Most Appropriate Technology consistent with national priorities.

Barriers related to lack of implementation vision

Lack of clarity in the definition of the concept of technology transfer, lack of access to adapted information, lack of institutional setting, and lack of a clear methodology to set national priorities, logically resulted in weak or absent implementation plans. TNAs seldom provided guidance on needed reforms of the legal and regulatory framework, or on the institutional, fiscal and financial systems to promote technology transfer, nor a clear vision of the responsible entities for technology transfer.

Project structure and approach

The present project has been designed to respond to Parties concern and demand and address the above mentioned barriers. The ultimate goal of the project is to provide the framework conditions, and adequate support, in order for GEF beneficiary countries to produce a grounded and useful TNA, with associated TAP fostering technology transfer for adaptation and mitigation. The new TNA Handbook (as revised by UNDP and UNEP) will guide the project development in terms of methodology and provide a general framework to countries conducting their TNAs. The project will also identify hurdles in using the revised TNA handbook and complement this tool with all needed methodological developments. To secure success

and cost effectiveness, a sequential, approach will be followed, in which 15 countries will be initially selected. More countries will be gradually added when some experience has been accumulated and capacities have been created at regional level. It is also expected that tools and methodologies well tested will then help to scale the process up, hopefully before the end of the first year.

Selection of countries will take into consideration elements including size of the country / economy, mitigation potential, adaptation needs, national interest and enabling environment, expression of interest by countries, past efforts, institutional capacities, etc. Initial countries will be chosen with a goal of regional diversity; Ghana, Senegal, Uganda, Argentina, Bahamas, Thailand, Cambodia will likely be part of the first set of countries to field test the revised TNA Handbook. In any case the selection of countries will involve a consultative approach, demonstrated interest from targeted countries and approval from the Project Steering Committee (PSC). Final list of participating countries will meet the following criteria:

- Regional balance: With respect to representation from Africa, Asia and America, and at the same time ensuring adequate representation of vulnerable Islands.
- Country size: Considering that large developing countries already have reasonable access to technologies in the international market, are already active participants in the CDM market, and may also get facilitation through sector approaches, the focus will be on medium-size and small countries.
- Balance between Mitigation and Adaptation: The TNA cover technology needs for both mitigation and adaptation and therefore the overall group of countries should provide a good balance between mitigation and adaptation technology needs.
- Interest shown by the countries and suggestions received from the various organisations, including from UNDP, UNFCCC, GEF, UNEP etc.
- For the first list of 15 countries, past record, familiarity and good experiences will also be important to ensure that good results can be obtained in the short time frame. It will secure carrying out TNA process successfully to other countries in the second round and after.

Participation of additional countries will be decided in a similar fashion after initial implementation has yielded some results and insights.

Based on the revised TNA handbook, participating countries will be provided with a draft of TNA methodology to develop their work plans for conducting their TNAs with support from the project team. The work plan will be based also upon a simplified format, but will include timelines, benchmarks, and indicators to show how each output at the national level supports the overall TNA process. Countries will receive grant financing for in-country activities, while international consultants and regional centers will be identified for capacity building workshops and provide much of the technical guidance and support. . The project will also establish mechanisms that promote exchange of experience and information between countries. This will not only aid in the preparation of TNAs but will establish the basis for cooperative arrangements for eventual implementation of measures identified in TNAs, although this lies outside the formal scope of this project.

Project architecture to achieve project objective

A list of activities is included in the work plan (Annex D).

The steps include:

- i. Preparatory work for project management, Inception Workshop, and preparatory work at country level (formation of TNA Team, appointment of national project coordinator etc.) in consultation with project team.
- ii. Development / adaptation of tools and training material

- iii. Organization of capacity building workshops in the regions
- iv. TNAs preparation and elaboration in countries with support from project consultants
 - v. Mid term regional workshops and country workshops for sharing experiences and getting feedback from a wide range of stakeholders
- vi. Preparation of Guidebooks providing further details and examples of applied methodology as considered useful to reinforce or adapt the revised TNA handbook to country situation
- vii. Coordinating support for TAPs preparation and elaboration in countries
- viii. Dissemination and sharing experiences- website, workshops, reports, newsletter, and network etc.

Note: For the additional countries, all steps, except (ii) and (vi) are followed, but capacity building workshops and support is provided by regional centers, who were involved in the first round (and hence developed capacity to support the TNA work, using the guidebooks and training material developed during the first round.

Component 1 Support for the development or strengthening of TNAs in 35-45 countries

National stakeholders will identify technologies needed in their countries with support from the project team. This will be done through provision of methodological tools (Component 2) and capacity building at regional level and in countries. Stakeholder consultations will form the basis to reach a consensus on technologies prioritized within sectors using approach given in revised TNA handbook however this may have to be complemented by other methodologies which provide information on costs and investment requirements. Identification and analyses of barriers hampering technology transfer will be conducted with a view to create an enabling framework for transfer of selected technologies. The countries will be supported in barrier identification and analysis through guidebooks (Component 2), and regional and local consultants. The methodology for identifying technology given in revised TNA handbook and enabling framework for transfer of technologies will be adapted to country conditions and modified based on the feedback and experience in the first fifteen countries.

The support for next round of countries will get much more coordinated by the regional centers who will now use the tested revised TNA handbook for technology identification and guidebooks for barrier identification and analysis. The production and communication of TNAs and TAPs to the UNFCCC will take place towards project end while outputs from components 2 and 3 will provide necessary capacity and inputs to ensure that these documents are high quality and implementable.

A continued process of consultations and analyses, lead by the national TNA team will gradually lead to elaboration of a TAP, with practical and implementable steps towards reduction and elimination of barriers for clean technologies. The development of a TAP will be conducted through a process oriented approach, which will actively involve various stakeholders in the formulation of policy elements.

This TNA/TAP process will involve at an early stage as far as possible:

- Stakeholder meetings and consultations,
- Workshops with financial institutions, private sector entrepreneurs, government, academics and researchers
- Providing platform for bringing together technology providers and users.

The TAP will systematically address practical actions necessary to reduce or remove policy barriers, finance related barriers and technology specific barriers. The plan will also address necessary actions in terms of solving interactions between various barriers and address the necessary timing.

While the TAP is developed by the national TNA team within the current programme, it should be recognized that adoption of the action plan by government lies outside the programme. It is therefore

important to ensure a consultative political process throughout the development of the TNA in order to enhance the chances of later adoption by government, and consequently it is envisaged that elaboration of TNAs and TAPs will take up to two years.

Component 1 has the following outputs:

1. A network of participating individuals and institutions at national level informed and bringing capacity to secure national consultations in order to reach a national consensus on adequate technologies Identification and creation of stakeholders groups will be based on recommendations contained in the draft TNA handbook.
2. A synthesis of methodological applications and hurdles carried out at national level and serving as input for TNA elaboration
3. Between 35 and 45 TNAs including TAPs produced, identifying barriers to technology transfer at national level and means and actions to overcome them.
4. Feedback for TNA handbook update based on national experiences and processes.

All methodological materials will be made available on UNEP website in the English language while TNAs and TAPs will be made available in any of the six UN languages of the participating countries hard copies of all reports and materials will be made available to participants during workshops. While formal reporting to the Convention will remain responsibility of the countries, the EA will keep the IA informed of progress and content of the TNAs and TAPs. The IA will keep the GEF informed of progress of project implementation.

Outcome: National consensus on priority technologies and agreement on a national action plan, institutional provision and capacity built for implementation and action plan update.

Component 2 Development of tools and provision of methodology information to support TNA and TAP processes

A simplified common approach to TNA will be developed based on the latest TNA handbook for training, capacity building and implementation purposes. The revised TNA Handbook has been developed by UNDP in consultation with UNEP, UNFCCC secretariat and EGTT. As a part of the guidebook, three tools are also being developed, viz., TNAssess, TechWiki and TNA Report Formulation Aid tool. TNAssess is an interactive tool for technology prioritization for a country at the sectoral / sub sectoral level based on multi criteria decision analysis methodology. It is to be used to facilitate a transparent, consultative, and user friendly interaction amongst stakeholders for prioritizing technologies both for adaptation and mitigation. TNAssess will require TechWiki, an online database of technology options required for mitigation and adaptation. Finally for recording the outputs from the TNA exercise in a standardized fashion a digital tool- “TNA Report Formulation Aid Tool” is being developed. These tools are however still under development and UNEP will complement the efforts of UNDP and others in this direction.

The revised TNA Handbook provides a basis for prioritizing technologies within sectors. It may also be important for countries to understand how to do an overall prioritization across sectors. Countries will also need detailed methodologies for analysis of technologies including economic analysis, estimation of marginal abatement costs, market assessment, barriers analysis and enabling framework creation. Enabling framework in turn may require methodology / guidance on how to analyze and address legal issues, access finance and so on. The TNA Handbook will be supplemented by developing required detailed methodologies and guidebooks for these areas.

Access to data on technologies will be needed by the countries. TNA handbook refers to TechWiki for this purpose. However, given that this is still under development UNEP would complement efforts in this

direction by providing either data or links and access to data bases. This would also entail paying up for some data bases. While the databank on technologies for climate change mitigation options can be based on dynamic extraction from other existing databases, the wide range and the low level of standardization and variable performances of technologies for adaptation pose a specific challenge. To address this challenge, the project team will draw on a team of experts within UNEP Risoe Centre and outside. Hence the project will need to invest upfront to access this information.

This component has the following output:

1. A tool to prioritize mitigation options based on cost effectiveness, existing potential, resource availability and relevance for national situations developed and presented.
2. A tool to prioritize technologies for adaptation based on climate change impacts as well as human, economic, social and costs related aspects developed and presented.
3. A simple and efficient market assessment tool made available
4. A process to apply the tools at national level agreed upon.
5. Access and links to information database elaborated and serving as a base for technology specification in terms of performance, cost and availability.
6. Reporting template for TNA elaborated.

These tools will allow each country to focus on the identification, adaptation and development of technologies best suited to their national priorities. Results of work will be presented and further elaborated during specialized working groups involving national representatives from supported countries.

Outcome: Methodologies which complement the revised TNA Handbook and facilitate technology information available to countries.
Capacity developed through workshops and guidebooks, Access to data. Regional networks ensure that critical technology information is available and cooperation mechanisms to share TNA experiences is in place.

Component 3 Establishment of a cooperation mechanism that aids preparation and refinement of TNAs and TAPs implementation and dissemination

The challenge-and value added- of the present initiative is to prompt synergies and to enhance cost effectiveness for implementation of TNAs. It requires initial investment to build mechanisms securing North South and South South coordination and technology transfer in the end. The TNAs and TAPs, once synthesized will provide a world-wide vision of the most urgent and impactful technologies needed by GEF beneficiary countries to address urgent challenges with respect to mitigation and adaptation. In order for this synthesis to be of relevance and trigger action, there is a strong need to invest in coordination, exchange of experience, coherence tool building, etc.

Because of the very nature of technology transfer, national networks are insufficient and need to be reinforced by a range of regional and international institutions specialized in technology transfer. National networks need to establish links with their neighbor counterparts and sometimes links with national institutions in other parts of the world. Technology Transfer from say Asia to Africa can be extremely meaningful for some specific technologies. The project will put in place the mechanisms for this cross fertilization to take place. As far as TNAs and TAPs processes are concerned, some countries will be more successful than others and it is important to identify key factors for success, indicate useful path and disseminate these experiences to other countries.

To address these needs, regional centers of excellence will be identified in each region to promote cooperation, build capacities in countries and region, share knowledge and experiences, and facilitate dissemination (see part III for details). A number of the project activities; viz., capacity building including training and dissemination will be carried out through the regional centers. A network of participant countries, organizations, knowledge centres and other interested stakeholders will also be created to foster cooperation and dissemination.

Dissemination will also be carried out through a number of cross exchange regional workshops (1- 2 in each region) for the benefit of stakeholders in the region. The workshops will also serve as a forum for exchange of views and sharing of knowledge, and building networks at regional level. An international workshop to disseminate and share views with stakeholders at large will also be conducted at the end of the project. The workshop will also serve as forum to disseminate the lessons learnt and synthesis report from the project. Other dissemination activities will be through the project website, newsletter, and presentations / publications in various fora, as and when an opportunity arises.

As the present project plans to support 35 to 45 countries, an important outcome of the project is to secure replicability. Hence it will be ensured that information from the project is readily available to other non participating countries, and they also have access to developed tools and a clear roadmap for replication.

A newsletter will be elaborated and sent to all GEF beneficiary countries. The newsletter will inform about progress of the projects and provide contacts at regional and international level.

An international workshop will take place at project end involving key partner countries in the project with opportunity for representatives from countries supported by and outside this initiative to attend and benefit from the successful experiences.

Support on request will be provided by the project team (UNEP, URC, Regional partners, and internationally recruited consultants), during project implementation and a separate mechanism for continued support after finalizing the TAPs will be proposed, although outside the scope of the present initiative..

Outputs

- 1.A Network involving both national and supra national institutions recognized for their success in technology transfer activities established and operational
- 2.Proven approaches to elaborate good quality TNAs developed. Institutional responsibilities set up. Capacities built to elaborate, implement and revise TNAs and associated TAPs.
3. Replication approach available to all GEF beneficiary countries together with a proposed mechanism for interactive support.
- 4.A “Best Practices and Lessons Learnt report” from the project produced and disseminated.
- 5.Synthesis report from the project produced and disseminated.

Outcome: Increased national and interregional cooperation on technology transfer as a mean to facilitate preparation of TNAs and implementation of TAPs

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:

The project stems from Decision 4/CP.13 of the Conference of the Parties to the UNFCCC, which requested the GEF to elaborate a strategic programme to scale up investment on technology transfer, and the resulting GEF Council-approved document that was also endorsed by the Conference of the Parties in

Poznan in December 2008. It is a response to a globally articulated priority, and builds on the first round of TNAs supported by GEF in its role as an operating entity of the Convention's financial mechanism. At the national level, many countries have highlighted their need for assistance in determining both technology priorities and the measures needed to overcome barriers that prevent them from acquiring these technologies under market or near-to-market conditions.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH SCCF ELIGIBILITY CRITERIA AND PRIORITIES:

The project is an element of the GEF's Strategic Program on Technology Transfer and consistent with the SCCF window on Technology Transfer. The project will support goals of GEF-supported mitigation and adaptation activities, in particular technology related issues, with regard to the countries needs to adapt to climate change. The project will help countries prioritize their technology needs through robust Technology Needs Assessments and preparation of national action plans, and will in principle aid future GEF programming by providing greater clarity, consistency, and consensus regarding climate change technologies at the national level.

D DESCRIBE ADDITIONAL COST REASONING

This is a Climate Change Enabling Activity and in accordance with convention guidance is implemented on an agreed full cost basis requiring only in-kind contribution by GEF-eligible countries. The project responds to a specific UNFCCC decision regarding technology transfer.

Reduction of greenhouse gas emissions has a global benefit, and measures to reduce emissions must be undertaken in developing countries in order to meet goals agreed under the Convention. Technology issues have moved to the center of climate change negotiations and the Parties to the UNFCCC have emphasized the importance of conducting GEF-supported Technology Needs Assessments in developing countries. Done well, these can provide the necessary framework for accelerated technology transfer and diffusion and the associated reduction in emissions as well as response to challenges posed by climate change. GEF involvement is justified because countries would not on their own have the means or rationale for conducting the analysis and making plans for acquiring technologies that are more costly but have a global benefit.

E. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MITIGATION MEASURES THAT WILL BE TAKEN:

The main project risk stems from the fact that most developing countries do perceive climate change as a national development priority issue and therefore lack a strong political commitment to the TNA process in order to obtain results that would significantly advance the achievement of sustainable development objectives. The weak commitment to climate change issues may result in countries not allocating adequate financial and human resources needed for conducting the widest possible stakeholder engagement necessary for producing a good TNA and also for achieving consensus on a national technology action plan. There is therefore a risk that National partners may therefore revert to the easier but less useful approach followed by many countries in conducting initial TNAs, which in many cases resulted in a list of technology needs without much analysis of what was needed to realize those technologies. In a number of eligible countries, the impact of the risk and the likelihood of occurrence are medium to high.

To reduce this risk, the project partners will within 12 months of commencement of project activities, seek the strongest possible political commitment of national authorities in charge of climate change issues to the achievement of project objectives. Efforts would be made by national teams to foster a closer working relationship with the teams in charge of preparing National communications and NAPAs, and other relevant institutions and stakeholders (for example, the private sector, financial institutions, research institutes, academic institutions, representatives of civil society, etc.) than was the case in the first TNAs.

The project will develop tailored approaches to fit with national conditions and that support sustainable development priorities at the national level. The closer supervision and greater provision of guidance and technical support through various means will reduce the risk that country teams take an easier but less useful path.

F. DESCRIBE, IF POSSIBLE, THE EXPECTED [cost-effectiveness](#) OF THE PROJECT:

The large-scale application of existing and near to market energy efficient and renewable technologies could globally cut the energy-related CO₂ emissions by half by 2050. This project aims at analyzing the best available and appropriate technologies for transfer to developing countries and at creating the framework conditions for more cost effective transfer of both GHG mitigation technologies and technologies for adaptation to developing countries, and their accelerated diffusion globally.

G. JUSTIFY THE [comparative advantage](#) OF GEF AGENCY:

UNEP helped a limited number of countries implement TNAs when these were first supported by the GEF and so has direct familiarity with the concept of Technology Needs Assessments. UNEP is also supporting the preparation of national communications under the UNFCCC in about 40 countries. These reports also address issues relating to technology transfer under Article 4.5 of the Convention.

With UNIDO, UNEP created and helps oversee a network of almost 40 National Cleaner Production Centers that continue to promote cleaner, more efficient industrial production and build capacities to select, finance, and operate better technologies, including their management. Some of these Centers will be useful in helping to select the technologies that are most suitable for the project countries. The GEF has supported projects that have been undertaken in part through these Centers, including one that strengthened the capabilities of NCPCs to include energy efficiency as a component in their support to industry.

UNEP's work on sustainable energy promotes the faster development of markets for renewable energy and energy efficient technologies, often by focusing on identifying and removing barriers in the finance sector that hinder the uptake of new technologies. Successful activities have involved building capacities and easing the costs and risks of entry of new financial actors in climate-mitigation sectors. UNEP also implements one of the largest capacity development programs for the CDM, with activities in more than 30 countries. This program is implemented with an approach similar to the one envisaged for this project. UNEP has significant experience in implementing such multi-country programs combined with normative tool development and training.

Other aspects of UNEP's work focus on developing approaches for environmental technology assessment and increasing trade in environmental technologies and services within the framework established under the World Trade Organization.

PART III: INSTITUTIONAL COORDINATION AND SUPPORT

A. PROJECT IMPLEMENTATION ARRANGEMENT:

Project Implementation Strategy

The project is seeking to secure relevant and quality oriented TNA and TAP elaboration for 35 to 45 countries with the ultimate goal to accelerate cooperation and effective transfer of environmentally sound technologies.

The project will draw on the work of the UNFCCC Expert Group on Technology Transfer, the body established by Parties to provide guidance on technology matters to the Convention. The project will use methodologies described in the revised TNA Handbook, supplementing these as needed, and will in turn

provide practical material for possible future updates of the Handbook conceived as a living document. Close collaboration with UNDP and other organizations (UNIDO, the International Energy Agency, the World Bank, the European Commission, etc.) supporting technology transfer efforts will be sought so as to contribute to the adoption of common methodologies and approaches.

The GEF's experience to date has shown that a technology need assessment is no simple task and that financial support provided individually to each GEF beneficiary country did not allow to capture the potential benefit of cross fertilisation of approaches and, in the end, accelerated transfer of technologies. The barriers needing to be removed generally relate to high cost of technology and access to finance, policy and regulations, human and institutional capacity and information. The project proposes a path for elaboration of TNAs and action plans, fostering technology transfer. The processes are to be replicable, sustainable, and cost-effective.

The first step in the country specific research and analysis phase is to identify the institutional structure and main stakeholders. This is essential for selecting the representatives that form the core of the national TNA team, which will serve as a taskforce during the elaboration of the TNA. The stakeholders will include those involved in the preparation of the national communications as well as other policy/decision makers at highest levels in government, industry, financial institutions, technology experts, NGOs, and CDM project developers (if any). Private sector will be actively involved through representative from appropriate industries / industry association, and financial institutions. If necessary, the selection will take place in two rounds, where the core of government officials and local researchers is formed first and additional members will be selected in a second round. A recommended structure for the TNA team will be provided to the participant countries

The full national TNA team will serve as a working group headed by an appointed local project coordinator and assisted by local and regional consultants, and will include representatives from the above mentioned institutions. The national TNA team will be responsible for the work in all country activities of the program. The national TNA team will be strengthened though out, by a capacity building process, where tools and approaches will be shared among the team members. Eventually, the power to make policy decisions and implement the action plan lies with the national government but the TNA team can provide the critical inputs and impetus to implement the process.

The proposed structure is attached at the end of the proposal.

Regional centres will be identified in all the three regions such as Asian Institute of Technology (AIT), Centre for Energy Environment Resource Development (CEERD, Bangkok), The Energy & Resource Institute (TERI), PELANGI (Indonesia), Energy Research Centre (ERC, South Africa), CSIR (South Africa), ENDA (Senegal), African Technology Policy Studies Network (ATPSN), Sahara and Sahel Observatory (OSS), SouthSouthNorth, , Fundación Bariloche (Argentina), CARICOM and the Climate Change Centre (Caribbean region), OLADE (Ecuador) and others. While most of these centres are traditionally working on mitigation issues, the CCC and Fundacion Bariloche for instance have over recent years, developed substantial activities in the adaptation area. UNEP Risoe Centre has a long term working relationship with these centres, through other projects, such as the capacity building project for CDM (CD4CDM), which has been executed in 19 countries. Regional experts will be trained through training workshops, where common understanding of approach and methodologies will be achieved.

All along the project, other GEF agencies will be invited to participate. A closer cooperation will be sought in particular with UNDP due to its initial role in TNA and elaborating the revised handbook and with UNIDO due to its technology oriented speciality. International Financial Institutions' participation will be most useful due the key role played by finance in the transfer of some technologies and in particular as far

as technologies for adaptation go.

The challenge of the present project is twofold: gather and render operational in up to 45 countries, a team of stakeholders, dedicated to TNA and TAP exercises and aware of the barriers, issues, methodologies and national priorities. And effectively design and transfer to national teams on one hand and regional support centres on the other, the methodological tools needed to conduct a meaningful TNA exercise and design a practical TAP.

While the revised TNA handbook provides general principles for the two above themes, its application and its transfer are still to be carried out. UNEP and the URCA will use their long standing experience with CDM and national communication as well as NAPA support related activities, to internally come up with a strategy to address the above mentioned challenges. The first task will be to extract, characterize and simplify steps and dynamics of actors to be presented to the 15 country teams. This will secure that all relevant stakeholders are involved in a way consistent with their willingness, own roles and responsibilities in technology transfer and relevance of input in the process at the various stages. The second step will focus on going from the theoretical multi criteria analysis to the practical processes allowing national country teams to effectively and efficiently choose the focus in terms of technology subject to technology transfer. The issue here is not the boundaries of the analysis, but rather the practical application in-country of this analysis. In fact, these two elements successfully implemented will produce a quality TNA and will be a sound base for TAP elaboration.

In terms of practical steps, the inception workshop will be used to provide a general overview of the project strategy and will also allow to discussing step one: the stakeholders' involvements and existing sectoral and national plans to be collected and used. The inception workshop will also establish for participating countries, the national institutions leading the TNA and TAP exercise. In some countries, the Ministry of Environment might be appropriate while in others, line ministries in charge of technology transfer might be more appropriate. Each national team will present their national work plan and will hand out a simplified project document based on the template prepared by the project team. These plans and corresponding budgets at national level will be discussed and approved during the inception workshop. Approval will be carried out in writing no later than two weeks after inception workshop.

The regional partners will not be active in supporting the national teams in the first months of the project but will be present and actively asked to contribute with their own knowledge of the regional context and regional networks in place today. They will also present to participating national teams, their traditional roles in the region and provide an insight of the services they can already offer as well as their future role in the TNA exercises.

It is envisaged that at the end of the inception workshop, each national team will leave with a clear vision of the step needed for TNA preparation and a clear vision also of who can support their national process through time: the EA team and the regional centres.

Taking into account elements gathered during the inception workshop and existing TNAs as well as contents of the TNA handbook, the project team will spend a full month to elaborate the first technical package to be transferred to the national reinforced team during regional training workshops due to take place during month 2 of the project. 2 workshops per region are contemplated: the first one focussed on mitigation and the second one focussed on adaptation. This division of themes is considered crucial since the stakeholders are very different for each of the aforementioned topics and the analysis tools as well. During each of the workshops, the regional centres teams will be present and will be in charge of executing a regional synthesis, valuable for the whole initiative and for reporting purposes. Each country team will present their analysis of the first TNA exercise and highlight the gaps existing between this first exercise and the current TNA exercise. They will also be requested to provide practical comments on the draft TNA

methodological packages as presented by the EA team.

Back in their own countries, national teams will start the actual TNA elaboration. Reporting on activities will be carried out on a continuous basis and informally at this stage to allow for support to be effective. Missions will be organized in-country as needed by relevant experts upon request from national teams. The UNEP Risoe Centre based team will also upload all relevant documentation of the project website and provide support and information on its use as well as progress on the technological database hub on an ongoing basis.

Traffic and exchange of document and information in writing will be carried out on the project website so as to secure transparent and easily accessible data and information to all involved countries and by the regional project partners. The regional project partners will gradually be asked to support national teams in their region as their own knowledge and uptake increases.

By end of year one, the TNA processes for 15 countries will still be piloted by the URC but will comprise an increasing number of regional level interventions. On topics such as energy related mitigation technological options, costs and abatement curves, potential for energy efficiency by sector and renewable energy development, topics which are relatively well known, regional centres will take over from the URC fully at end of year one while newer issues in particular related to adaptation will be supported continuously by URC.

The EA in collaboration with the regional centres will start to identify candidates to start the TNA process for the second round at end of year one. Also at this horizon, all lessons related to TNA exercise, to the exclusion of TAPs will be gathered, synthesized and presented to the 15 national teams for confirmation. The final synthesis will be provided by the regional centres to the second batch of countries.

Once technologies will have been prioritized, also towards the end of year 1, a synthesis will be carried out to seek opportunity for clustering of country teams on common technologies and for barrier analysis.

TAPs first step will be to identify, at national level, barriers which hamper the deployment of these technologies which are appropriate, and present national as well as global significant benefits. Legal, financial, fiscal, barriers as well as institutional hurdles and identified needs for technology adaptation to national conditions will be laid out. Specific technology oriented networks will allow not only the countries to receive the technologies but also traditional technology providers from both developed and developing countries to initiate a dialogue of which key factors for success in deployment will result. For this new exercise, the guidance provided by the URC project team will be based on latest knowledge related to institutional, legal and financial topics. Methodological packages presenting the possible barriers, with causality and root causes, will be presented to the participating countries during a round of regional workshops specifically focussed on TAPs. This second round of workshops is envisaged to be even more interactive than the first round. National team will summarize outputs of their TNAs and also broadly describe their national circumstances. The regional centres will provide their vision of the barriers which hamper technology uptake. A panorama of institutions responsible for various aspects, technology adaptation, property rights, financial, legal, fiscal and any other relevant aspect to technology transfer will be outlined. A first collective exercise for prioritization of barriers and actions needed to remove them will be the central exercise of the second training workshop. It will be carried out threaded by the methodological package provided in advance by the project team

National teams returning to their countries will be able to carry out a full TAP exercise, in consultation and with inputs from all relevant institutions from the public as well as the private sector. Best and worse case studies will be exchanged on specific most common technologies, on the project website, so as to facilitate identification of optimum path for technology deployment. Internationally recruited experts will also

support this process.

At the end of year two it is expected that 15 countries will have fully carried out their TNA and TAP and another 20 to 30 will be well advanced in their TNA process. In particular TNAs will have been produced and TAPs processes will have started. This path should secure that at project end, 35 to 45 countries will have completed their TNAs. The learning curve in TNA processes will be carefully monitored by the URC, as well as the quality level of national outputs. By mid year two, regional centres will have put in place a fully operational support team for their region on all relevant topics concerning TNAs and TAPs. The remaining gaps, possibly in terms of TAPs for adaptation, will still be investigated and solved by the EA. The URC will also continue to monitor project progress and will carry out trouble shooting tasks as needed.

The above planning exercise is at this stage a theoretical one and will need to be adapted during project progress. Adaptive management actions will be presented to the Project Steering Committee as need arises and the IA, the GEFSEC and the UNFCCC will be informed specifically should any major disruption appear in project execution.

Project Management and Supervision

UNEP/DGEF serves as the GEF Implementing Agency for the global initiative and would provide supervisory functions of the project to ensure that GEF policies and criteria are adhered to and that the project meets its objectives and achieves expected outcomes in an efficient and effective manner.

UNEP-DTIE will execute the project in collaboration with the URC. While UNEP-DTIE takes the overall responsibility for the project execution, the URC will use its long standing experience and expertise to secure meaningful TNA and TAP processes. UNEP has made technology transfer and environmentally sound technological options its topics for action as translated in numerous public statements and newspaper articles. Both UNEP and its collaborative centres amongst which UNEP Centre Risoe, are already allocating resources to this particular topic and will continue doing so during project implementation. UNEP Risoe Centre is experienced in managing multi-country and multi-stakeholder projects, such as e.g. the CD4CDM project, which aims at building national capacity to enhance the efficiency of the Clean Development Mechanism in 18 countries in Latin America and Africa (<http://cd4cdm.org/>). UNEP Risoe Centre has a long track record on energy planning activities, methodology development (e.g. abatement cost curves), barrier analysis for enhancement of mitigation technologies, analysis of adaptation options, policy analysis, including analysis of subsidies and incentive structures, institutional and legal frameworks and innovative financing mechanisms (see e.g. http://www.uneprisoe.org/clean_energy.htm & <http://www.uneprisoe.org/archived.htm>). Finally, UNEP Risoe Centre has published a large number of reports, and scientific papers on the above issues (see e.g. <http://www.uneprisoe.org/publications.htm>).

This provides a real opportunity for synergies between a wide range of donor programmes. UNEP Risoe Centre will establish a dedicated Project Implementation Unit, headed by a Project Manager, for this purpose. UNEP is ready to host various events related to the present project and provide space for working groups as need be. The URC will be the hub for support for both regional and national teams. Its high level expertise will be invaluable to project progress and success. National teams, executing their TNAs will be supported as needed first by the URC and as project progresses, increasingly by the regional centres, involved in the project, while securing sustainability and replicability of the approach.

As previously mentioned, the Project Steering Committee (PSC) is composed of a member of the GEF Secretariat, a member of the EGTT a member of the UNFCCC TT Clear, UNEP, UNDP, the World Bank

and UNIDO. UNEP Risoe Centre represented by the project manager will also participate without right to vote. The PSC will be chaired by UNEP. It will work on the basis of an agenda and background documents prepared by the PIU. In return the PSC will provide orientation for the programme of work with the PIU. The PSC will physically meet at least once a year. One of the key tasks of the PSC is to ensure coordination and secure relevance of work carried out at global level. The project Implementation Unit, will be responsible for the preparation, approval, and monitoring of the annual project budget and work plan. These documents will be presented for comments and approval to the PSC and forwarded to UNEP DGEF thereafter.

The PSC will also be instrumental in selecting countries to be supported by the present initiative based on substantiated proposal from the PIU.

The project structure is designed in such a way as to make sure it will allow to enlarging the scope of project stakeholders and have them integrate the wide range of potential project partners.

PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF:

The project has not received preparatory funding. However in the course of preparation it became evident that in order to secure cost efficiency, the number of countries in the first batch, originally envisaged to be composed of 2 per region, had to be increased. This allows country support to be more efficient, travel costs to be reduced and the regional centers to become more familiar with national TNA teams and rapidly active in country support.

PART V: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)


A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the [country endorsement letter\(s\)](#) or [regional endorsement letter\(s\)](#) with this template).

N/A: ENABLING ACTIVITY FINANCED FROM THE SCCF UNDER THE FORM OF A GLOBAL INITIATIVE. LETTERS OF INTEREST WILL BE PROVIDED FOR PARTICIPATING COUNTRIES ON AN ON GOING BASIS.

Name	Position	Ministry	Date (Month, day, year)

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date:	Project Contact Person	Telephone	Email Address
Maryam Niamir-Fuller, Director UNEP/DGEF		July 27, 2009	George Manful, Task Manager, UEP/DGEF	+254-762- 5058	George.manful@ unep.org

ANNEX A: CONSULTANTS TO BE HIRED FOR THE PROJECT

<i>Position / Titles</i>	<i>Estimated person weeks**</i>	<i>\$/ person week*</i>	<i>Tasks to be performed</i>
For Technical Assistance			
Nationally recruited (estimate)			
Technology advisor mitigation*40 countries	240	1000	Tasks are to assist national institutions in grasping the technological gap, economics of introducing technologies and opportunities for local adaptation as well as local production if any. Work to be developed in close coordination with the internationally recruited technology experts. US\$ 240,000
Adaptation Expert *40 countries	240	1000	Tasks are to assist national institutions in grasping the technological gap, economics of introducing technologies and opportunities for local adaptation as well as local production if any. Work to be developed in close coordination with the internationally recruited technology experts. US\$ 240,000
Policy /legal advisor*40 countries	240	1200	Tasks are to assist national institutions in sharing responsibility for introducing and or adapting technologies. US\$ 288,000
Finance Expert	120	1200	To assist national institutions in addressing barriers to access to finance for technology transfer projects US\$ 144,000
TOTAL NATIONAL	840		US\$ 912,000
Internationally recruited			
Methodology, multi criteria, market assessment	22	3500	Technology panorama, main actors, cost consistency, marginal cost abatement. US\$ 77,000
Mitigation technologies	22	3500	Technology panorama, relevance and costing. Adaptation and identifying alternatives as well as environmental downsides US\$ 77,000
Technologies for adaptation	44	3500	This expertise is focused on technologies for adaptation and their relevance for supported countries, with identification, criteria for selection, costs and benefits. US\$ 154,000

Policies	20	4000	Layout of basic conditions for technology transfer materialization. US\$80,000
Financing and Financial instruments	25	4000	In technology transfer, one main aspect is finance and risk sharing. This expertise will be focusing on finding adapted solution to this barrier US\$100,000
Legal, regulatory and institutional expert	20	4000	In many cases, mitigation technologies are not transferred because conditions for economic operation are lacking. Barrier removal strategy will be the focus of this expertise US\$80,000
Technology transfer action plan and implementation	8	3500	According to various countries elaboration of a meaningful TAP, will give ground to effective technology transfer. Hence the quality and comprehensiveness of these TAPs is essential. US\$ 28,000
Expert in training	18	3500	Support and methodology to effectively build capacity through training using the most up to date techniques. US\$ 63,000
TOTAL INTERNATIONAL	179		US\$ 659,000

* Provide dollar rate per person weeks; ** Total person weeks needed to carry out the tasks.

¹ This figure represents 50% of the estimated person weeks/costs required for project execution.

INTERNATIONAL CONSULTANTS ARE CONSULTANTS HIRED AT GLOBAL LEVEL AND HENCE NOT PART OF NATIONAL BUDGETS. THE PROJECT WILL STRIVE TO INVOLVE INTERNATIONAL CONSULTANTS FROM GEF BENEFICIARY COUNTRIES MEETING THE REQUIREMENTS AS SPECIFIED WITHIN THE TERMS OF REFERENCE.

ANNEX B: PROJECT RESULTS FRAMEWORK

Outcomes/outputs	indicator	Baseline	Medium Term (MT)/end of project (EP)	Means of verification	Risks
<u>Development objective:</u> Improved Technology Needs Assessment (TNA) and Technology action plans (TAP) developed	Quality and usefulness of TNAs and TAPs for technology transfer implementation	TNAs do not exist or are of little use for actual technology transfer.	MT: 15 high quality TNAs including TAPs produced EP : 35-45 TNAs including TAP of high quality	Final evaluation	Reduced interest of countries governments due to other competing demands and more urgent priorities such as crisis situation. Weak national institutions and limited human and financial resources
<u>Outcome 1:</u> Supported countries develop a national consensus on Technology Action Plan consistent with national circumstances and entrust a national institution or agency to implement agreed plan Suggestions for improvement of TNA Handbook available	35 to 45 nationally accepted and technically grounded TNAs including TAPs. Institutions responsible for TNA and TAP implementation Capacity developed for TNA and TAP implementation	Small number of TNAs go further than a wish list No TNA is entrusted institutionally Little capacity to deal with the complex issue of technology transfer	MT: Consultation result in TNAs including TAPs for 15 countries. EP: 35-45 countries produce quality TNAs including a TAP.	Project reporting Final evaluation	Lack of local capacity to manage GEF supported projects and related processes Other priorities are drawing local human resources away from the TNA exercise.
<u>Outcome 2:</u> Development of tools and methodologies that are used to carry out Technology Need Assessments and Technology Action Plans	Development of methodological tools (mitigation and adaptation) and their applications Access to information	Last round of TNA carried without any methodological supports and consistent methodologies across countries	MT: Methodology reviewed by recognized group of experts and adopted by relevant national institutions. Dynamic databank accessible	Methodology documents / Guidebooks Research Papers Internet powered Databank	Major technology break through rendering existing exercises unnecessary

		TNA Handbook however untested and no methodology for developing TAP Data scattered and many times not in public domain	EP: Methodology integrated and used by supported countries.	Final evaluation	
<u>Outcome 3</u> : Increased national and interregional cooperation as a mean to support technology transfer	Number of exchange on technology transfer regarding TNAs	Near zero	MT: Institutions and individuals identified and in contact. EP: Active network	Traffic on project website Quality of traffic and substance as evidenced during final evaluation	Lack of sustained interest from governments Unstable situations resulting in changes at individual and institutional level Major technology break through rendering existing framework for cooperation irrelevant.

Annex C - Costed M&E Work Plan

Results-Based Monitoring and Evaluation Framework

1. Monitoring Framework and Budget ⁴

Objective / Outcome ⁵	Outcome / objective level indicator ⁶	Baseline Conditions ⁷	Mid point Target ⁸ (as relevant)	End of Project Target	Means of Verification ⁹	Monitoring / sampling (frequency / size) ¹⁰	Location / Group	Responsibility	Time frame ¹¹	Budget (Object of expenditure & cost) ¹²
----------------------------------	--	----------------------------------	---	-----------------------	------------------------------------	--	------------------	----------------	--------------------------	---

⁴ Detailed monitoring plan should be included in the M&E project section. This table is primarily intended to reflect how the outcome level indicators will be tracked to facilitate monitoring of **results** (as opposed to monitoring of project implementation progress). The implementation of the Results-based Monitoring Framework will be assessed at mid point and at end of project (through the Mid-Term review and Terminal Evaluation processes). The quality of M&E implementation will be rated with the Project Implementation Review (PIR). The contents of this table should be validated and agreed upon at the project inception meeting.

⁵ All project outcomes should be included in this column. The objective here is to provide the means to monitor progress in achieving the results set for the life of the project. Goals and long term impact indicators should not be included in this section, but may be discussed in other sections of the project document and M&E plan.

⁶ Only key indicators should be included (not more than 2 or 3 per outcome). Appropriate selection of outcome indicators is essential to assess progress in achieving project results.

⁷ Please note that if no baseline information for a particular indicator exists it is difficult to justify the targets. Also, please note that baseline data should be collected during the project preparation phase (PPG). If essential baseline data is not complete at the time of Work Program entry (for FSP) or CEO approval (for MSPs) the end of the first year of project implementation is the deadline for collecting the necessary data. The plan for the collection of such baseline data should be added in the next section along with its associated cost.

⁸ The mid point target will be reviewed at the Mid-Term Review along with validation of other focal area Tracking Tools. It is acknowledged that mid-point targets may not be relevant to all projects or all project outcomes. Flexibility will be applied.

⁹ The means of verification is the source of data that the project team will use to track the indicator (e.g., if the indicator is “forest cover diversity”, the means of verification could be “field surveys data” and “satellite imagery). Reviewing of project reports alone is insufficient.

¹⁰ This column should describe for each indicator the size (e.g., whether entire protected area or only a fraction, or, for example, in the case of a survey, how many people would be covered). The frequency (e.g., once in the lifetime of the project, quarterly during the first year, yearly, etc.)

¹¹ Expected date (month/year) in which the monitoring activity will take place

¹² For example, 15 satellite images @ \$1,000 each = \$15,000, or 4 field sampling trips by 2 staff @ \$300 each= \$1,200

Objective / Outcome ⁵	Outcome / objective level indicator ⁶	Baseline Conditions ⁷	Mid point Target ⁸ (as relevant)	End of Project Target	Means of Verification ⁹	Monitoring / sampling (frequency / size) ¹⁰	Location / Group	Responsibility	Time frame ¹¹	Budget (Object of expenditure & cost) ¹²
National consensus on priority technologies and agreement on a national action plan, institutional provision and capacity built for implementation and action plan update	Network operational	No networking	Network identified and providing technical backstopping to all country teams	Network has provided satisfactory support to country teams in delivering high quality TNAs and TAPs	List of institutions and individuals active Output produced by network partners available on website	Half yearly from webtool questionnaires	National teams RISO	PIU and National Project Managers M&E expert	6 months	20000 within web based tool design and at workshops
	Current methodology applied towards tech transfer application	Current methodology exists but is not applied or tested	Current methodology tested and strengths and weaknesses identified	Current methodology revised and rollout to all remaining countries carrying out their TNAs	Revised guidelines and national reports Workshop reports	on going	Methodology work group, national teams	PIU and National Project Managers	yearly	Project document and PIRs
	TNAs produced including a feasible TAP	Low quality TNA	TNA processes include relevant institutions and apply precise methodology	35 to 45 Quality TNAs and TAPS used to prioritize investment decisions	TNA and TAP documents Government programmes and sector plans, CDM projects, donor assistance	End of project	National teams RISO	PIU and National Project Managers M&E expert	End of project	Country teams and project team
	Suggestions for improvement of TNA Handbook available	Theoretical document	15 TNAs and TAPs produced, and used to support investment decisions							included in the final evaluation
Multi criteria methodology and technology information available to countries	tool to prioritize mitigation technology options	No tool	Tool developed and tested	Tool revised and improved	Project Reporting Survey to country teams	NA	RISO and national teams	Website an TNAs	Mid term and project end	Cost included in final evaluation
	tool to prioritize adaptation technology options presented.	No tool	Tool developed and tested	Tool revised and improved	Project website					
	simple efficient market assessment tool	No tool	Tool developed and tested	Tool revised and improved						
	process to apply the tools at national level agreed upon.	No tool	Tool developed and tested	Tool revised and improved						
information database serving as a base for technology specification	Scattered data	Website of existing databases online, and agreements with hosts to improve key	Existing databases enhanced to provide technology specification to support TAP	Host agreements Report on databases and project related improvements	End of project Start and end of project	RISO	RISO	start and project end	Cost included in component 3	

Objective / Outcome ⁵	Outcome / objective level indicator ⁶	Baseline Conditions ⁷	Mid point Target ⁸ (as relevant)	End of Project Target	Means of Verification ⁹	Monitoring / sampling (frequency / size) ¹⁰	Location / Group	Responsibility	Time frame ¹¹	Budget (Object of expenditure & cost) ¹²
			data bases	teams and investors available online and utilized.						
Increased national and interregional cooperation on technology transfer as a mean to facilitate preparation of TNAs and implementation of TAPs	X. Networks provide two rounds of highly satisfactory capacity building workshops in application of project tools and methodologies Δ. Technical backstopping in application of project tools and methodologies provided by networks on demand to national teams	No network Scattered approaches No replication approach available	One highly satisfactory capacity building workshop conducted 80% satisfactory response to requests from national teams for technical support	Two highly satisfactory capacity building workshop conducted 90% satisfactory response to requests from national teams for technical support	Workshops questionnaires Quality of TNAs and TAPs Log of technical backstopping request Feedback questionnaires on support received from network		PMU	end of project	National teams, RISO	Final evaluation

2. Cost of acquisition of essential baseline data during first year of project¹³:

The cost of obtaining baseline data is situated at two levels:

The first level is national and responsibility is delegated to project executing agencies in participating countries.

This is mainly paid through cofinancing since national communications and TNA exercises have already been carried out.

A second level of data collection is under and an integral part of the subcontract to conceive a web based data tool. The basic data collection is carried through dynamic links amongst existing technology databases.

Hence a specific budget for this is not needed. An estimated amount concerning 40 countries + access/ buying technology oriented data is 80000 at national level and an additional 20 000 at global level.

3. Cost of project inception workshop (please include proposed location, number of participants):

¹³ Refer to detailed M&E work plan for additional information on what data will be collected and what activities will be undertaken. The data to be collected needs to be consistent with the indicators included in the table above.

For this particular initiative. The inception workshop is crucial as it is a key moment to finalize participating countries. Hence this workshop will involve around 100 experts mainly from countries interested in carrying out a thorough TNA/TAP exercise. 10 countries are already part of the present project. 30 countries will be brought on board. In order to the inception workshop to be useful, prior dynamic exchanges and draft TNA project documents preparation will be needed. During the workshop, issues encountered during first TNA and adapted methodology to carry out this implementation oriented TNA TAP exercise, will be discussed in particular using the existing handbook.

Hence the cost of inception workshop is estimated at \$200,000.

4. Cost of Mid-Term Review/Evaluation:

The present project is only 2 years duration to respond to parties concern related to technology transfer. This is a challenge. A mid term review is irrelevant. Nevertheless UNEP will carry out an in depth internal review of this project at midterm together with the first PIR process.

5. Cost of Terminal Evaluation:

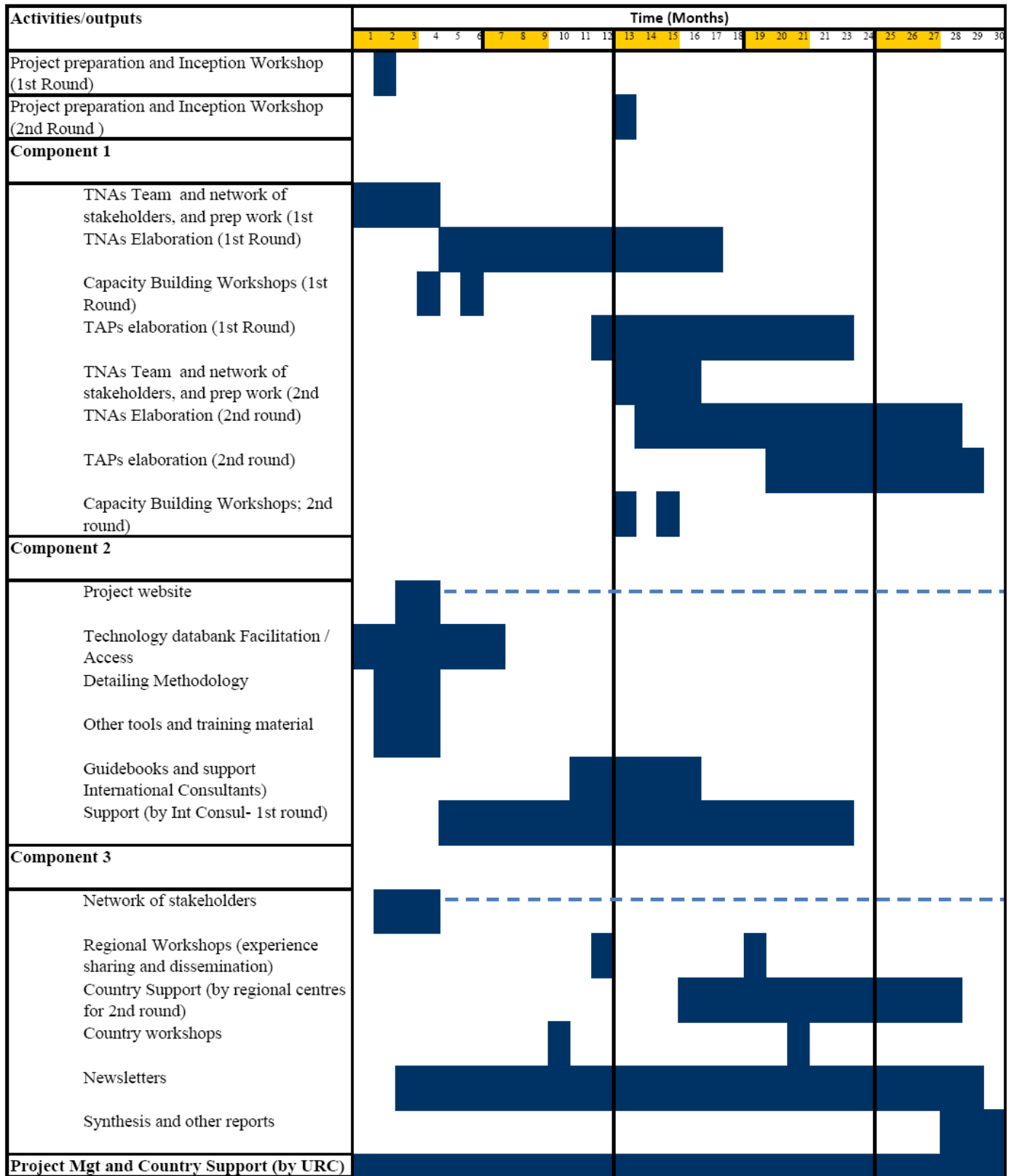
The cost of terminal evaluation is estimated at 80,000 \$. It will be carried out by an independent team, selected by the UNEP evaluation office.

6. Any additional M&E costs ¹⁴:

Total costs (this figure should be included in the consolidated project budget and in the Request for CEO endorsement/approval in the M&E budget line):
80,000

¹⁴ Please describe the activity and included the expected cost. Additional M&E costs could be related to the following: (i) Additional reviews and evaluation processes for phased and tranced projects; (ii) application & validation of tracking tools.

ANNEX D: PROJECT WORK PLAN



Note: 1st round refers to first 15 countries and second round to the balance countries.

The TNA Handbook will be the starting point in terms of methodology and the project will be implemented using a sequential approach in which 15 countries will be initially selected. More countries will be gradually added when

some experience has accumulated and capacities created at regional level as well as in terms of tools and methodologies to scale it up, which is expected around end of the first year.

While the Technology action plan is developed by the national TNA team within the current programme, adoption of the action plan by government lies outside the programme. It is therefore considered important to ensure a consultative political process throughout the development of the TNA in order to enhance the chances of later adoption by government, and consequently it is envisaged that elaboration of TNAs and TAPs will take up to two years from identification of country to project end.

ANNEX E: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, Responses to Comments from the Convention Secretariat made at PIF)

1. GEF needs to be explicitly involved in the development of the methodology:

- The methodology will be developed under component 2 of the project, applied in component 1 and disseminated in component 3. For component 2 a specific methodology workshop will take place and GEF Secretariat will be invited to participate.
- Furthermore GEF Secretariat is a member of the PSC.

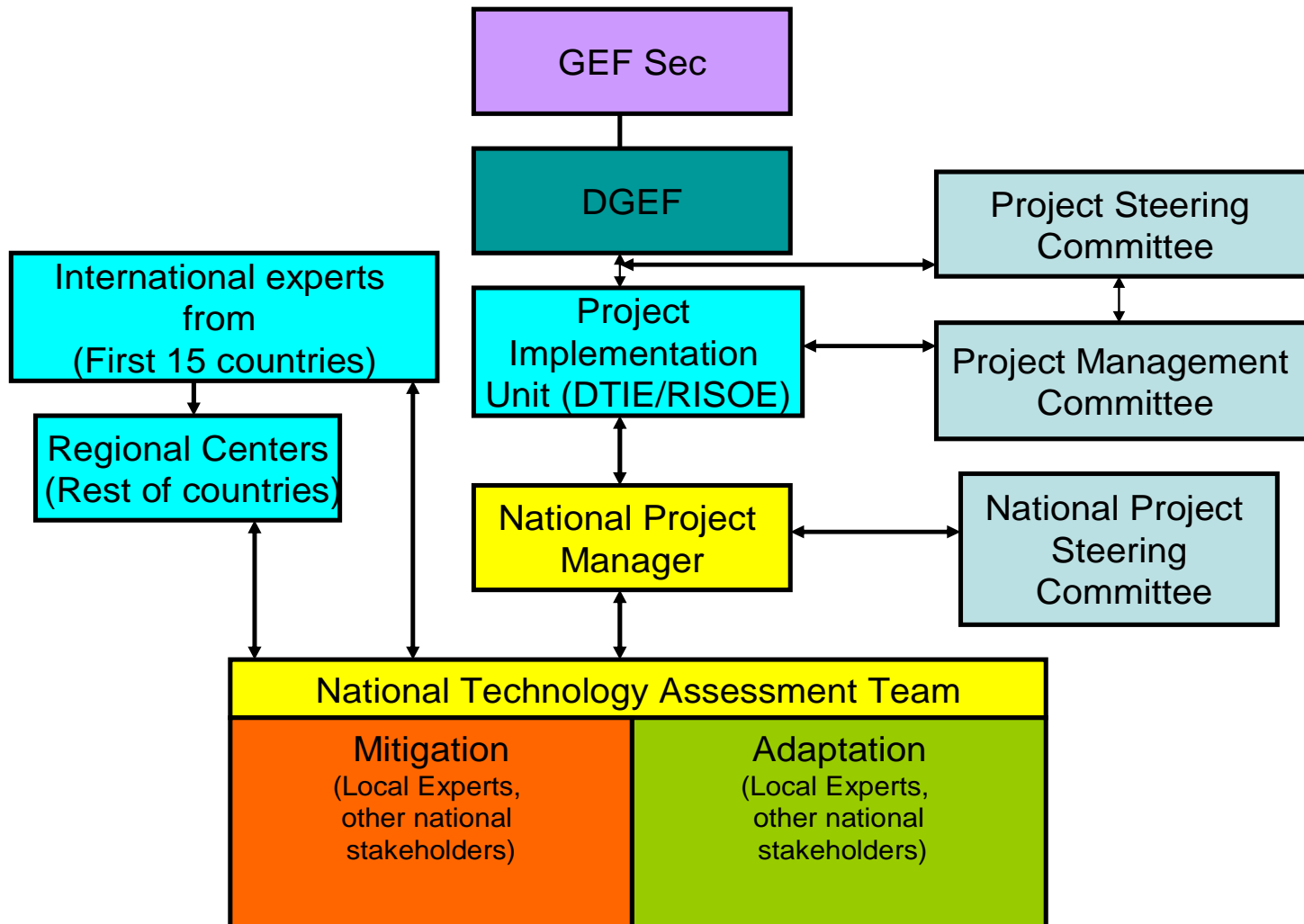
ANNEX F: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

- A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.**
- B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY.**
- C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:**

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>SCCF Amount (\$)</i>				<i>Co-financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To-date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
Total		0	0	0	0	0

* Uncommitted amount should be returned to the SCCF Trust Fund. Please indicate expected date of refund transaction to Trustee.

Project Organizational Structure





UNITED NATIONS ENVIRONMENT PROGRAMME

Programme des Nations Unies pour l'environnement

Programa de las Naciones Unidas para el Medio Ambiente

Программа Организации Объединенных Наций по окружающей среде

برنامج الأمم المتحدة للبيئة

联合国环境规划署



Technology Needs Assessments

Project Executive Summary:

Technology needs assessment (TNA) as a set of country-driven activities that identifies and determines the mitigation and adaptation technology priorities of developing country Parties is central to the work of Parties to the Convention on technology transfer and present an opportunity to track an evolving need for new equipment, techniques, practical knowledge and skills, which are necessary to mitigate GHG emissions and/or reduce the vulnerability of sectors and livelihoods to the adverse impacts of climate change. This project seeks to support 35 to 45 countries with GEF grant financing of US\$ 9 million to carry out improved TNAs involves in-depth analysis and prioritization of technologies, analysis of potential barriers hindering the transfer of prioritized technologies as well as issues related to potential market opportunities at the national level. National Technology Action Plans (TAPs) which will be prepared as sequel to the TNAs will outline essential elements of an enabling framework for technology transfer consisting of market development measures, institutional, regulatory and financial measures, and human and institutional capacity development requirements will include a detailed plan of action to implement the proposed policy measures and estimate the need for external assistance to cover additional implementation costs. Targeted training and supporting materials related to methodology for prioritization of technologies, market assessment, access and links to data on technologies will be developed and tested and distributed within the framework of the project. The project will also help provide feedback to fine tune methodologies and contribute to the revision of the new TNA Handbook through an iterative process involving the national project partners and regional centers of excellence.

Table of Contents

1	Project Overview	4
	Project Information	4
2	Project Justification.....	5
3	Project Statement & Approach	8
	Project Statement	8
	Project Approach	8
	Logical Framework.....	17
	Risk Analysis	17
4	Reporting & Evaluation	18
	Progress & Financial Report.....	18
5	Project Budget.....	19

LIST OF ACRONYMS AND ABBREVIATIONS

AIT	Asian Institute of Technology
ATPSN	African Technology Policy Studies Network
CARICOM	Caribbean Community and Common Market
CEERD	Centre for Energy Environment Resource Development
CDM	Clean Development Mechanism
CSIR	Council for Scientific and Industrial Research
COP	Conference of the Parties
DGEF	Division of Global Environment Facility Coordination
DTIE	Division of Technology, Industry and Economics
ENDA	Environmental Development Action in the Third World
ERC	Energy Research Centre
EST	Environmentally Sound Technology
LDC	Least Developed Countries
OLADE	Organización Latinoamericana de Energía
OSS	Sahara and Sahel Observatory
PSC	Project Steering Committee
PMC	Project Management Committee
PIU	Project Implementation Unit
TNA	Technology needs assessment
TAP	Technology Action Plans
TERI	The Energy and Resource Institute
SCCF	Special Climate Change Fund
SBSTA	Subsidiary Body on Scientific Technological Advice
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
URC	UNEP Risoe Centre on Energy, Climate and Sustainable Development

1 Project Overview

Project Information

Table 1: Required Project Information

Identification	GFL: PMS:	
Project Title	Technology Needs Assessments	
Managing Division	Division of GEF Coordination	
Project Manager and Org. Unit	George Manful	Climate Change Unit
Type/Location	FSP [Global/Normative/Enabling Activity]	
Trust Fund:	Special Climate Change Fund	
Strategic objectives: GEF strategic long-term objective Strategic programme for GEF IV	Climate Change Enabling Activity Special Climate Change Fund – Technology Transfer	
Project executing organization	DTIE WITH UNEP RISOE CENTRE (URC), REGIONAL CENTERS, NATIONAL PARTNERS	

Duration and Cost

Duration

Project Commencing: November 2009	Project Completing: April 2012	Total duration in Months: 30
-----------------------------------	--------------------------------	------------------------------

Cost of project	US\$	%
Cost to the GEF Trust Fund	8,181,818	74
<i>Co-financing</i>		
Cash		
Contribution from TMA-Norway	705,000	6.5
<i>Sub-total</i>	<i>705,000</i>	
In-kind		
Contribution from countries	2,000,000	18
Contribution from UNEP/RISOE	150,000	1.5
<i>Sub-total</i>	<i>2,150,000</i>	
Total	11,036,818	100

2 Project Justification

The UNFCCC process defines technology needs assessment (TNA) as a set of country-driven activities that identify and determine the mitigation and adaptation technology priorities of developing country Parties. The purpose of TNA is therefore to assist developing country Parties to the UNFCCC identify and analyse priority technology needs, which can form the basis for a portfolio of environmentally sound technology (EST) projects and programmes to facilitate the transfer of, and access to, the ESTs and know-how in the implementation of Article 4.5 of the Convention. Hence TNAs are central to the work of Parties to the Convention on technology transfer and present an opportunity to track an evolving need for new equipment, techniques, practical knowledge and skills, which are necessary to mitigate GHG emissions and/or reduce the vulnerability of sectors and livelihoods to the adverse impacts of climate change.

Since 2001 developing country Parties to the UNFCCC have been assessing their technology needs in the areas of climate change mitigation and adaptation within the framework of their national development plans and strategies. Through its interim financing for capacity-building in priority areas – enabling activities phase II (also known as “top-ups”) – the Global Environment Facility (GEF) provided funding to 94 eligible countries to enable them to conduct TNAs. Parties made available information on the results of their needs assessments either as separate documents or as part of their national communications.

In December 2007, COP 13 requested the GEF, in consultation with interested Parties, international financial institutions, other relevant multilateral institutions and representatives of the private financial community, to elaborate a strategic programme to scale up the level of investment for technology transfer to help developing countries address their needs for environmentally sound technologies. In response to this guidance, the LDC/SCCF Council approved in November 2008 its strategy presented in the document: “Elaboration of a Strategic program to scale up the level of Investment in the Transfer of Environmentally Sound Technologies”. This strategy paper which was submitted to COP 14 in December 2008, was overwhelmingly endorsed by Parties and renamed Poznan Strategic Program to scale up the level of Investment in the Transfer of Environmentally Sound Technologies. To help implement this strategy, the LDC/SCCF Council approved a grant funding of \$50 million using existing GEF-4 resources and the SCCF Program on Technology Transfer. The Strategic Program on Technology Transfer consists of three windows: (1) technology needs assessments; (2) piloting priority technology projects; and (3) dissemination of successfully demonstrated technologies.

This project deriving from window (1) of the Strategic Program on Technology Transfer is designed to support 35 to 45 countries, to carry out improved Technology Needs Assessments within the framework of the UNFCCC. The assessments will involve amongst others in-depth analysis and prioritization of technologies, analysis of potential barriers hindering the transfer of prioritized technologies as well as issues related to potential market opportunities at the national level. National Technology Action Plans (TAPs) agreed by all stakeholders at the country level will be prepared consistent with both the domestic and global objectives. These plans outlining essential elements of an enabling framework for technology transfer consisting of market

development measures, institutional, regulatory and financial measures, and human and institutional capacity development requirements will also include a detailed plan of action to implement the proposed policy measures and estimate the need for external assistance to cover additional implementation costs. Targeted training and supporting materials related to methodology for prioritization of technologies, market assessment, access and links to data on technologies will be developed and tested and distributed to all eligible countries. Experiences gained in implementing the project will be shared amongst participating countries to enhance cross country learning. The project will also help provide feedback to fine tune methodologies and contribute to the revision of the new TNA Handbook through an iterative process involving the national project partners and regional centers of excellence.

Baseline situation analysis

Information contained in the first TNA reports and initial national communications already submitted to the UNFCCC by developing countries revealed that these are currently undertaking activities particularly in the energy, transport, forestry and agricultural sectors which not only advance the achievement of their national development priorities but also lead to emissions of greenhouse gases responsible for causing global warming. The reports also indicate that important socio-economic sectors such as agriculture, water resources, terrestrial ecosystems including forestry, coastal and marine resources as well as human health are extremely vulnerable to the adverse impacts of climate change and are already experiencing significant multiple stresses from current climate variability. These impacts are likely to be exacerbated by future climate change, a factor which makes their economies as well as their infrastructure highly vulnerable.

Technology needs assessments carried out in 70 countries and report submitted to the UNFCCC indicate that both mitigation and adaptation technologies are required by developing countries to address the challenges of climate change. Information contained in the second synthesis report on technology needs identified by Parties not included in Annex I to the Convention (FCCC/SBSTA/2009/INF.1) submitted to SBSTA 30 in June 2009 reveal that national circumstances were the key factors influencing the choice of sectors selected for the conduct of TNAs, while the criteria for the selection of technologies were influenced mainly by development-related concerns. Energy generation and use, transport, agriculture and forestry were the most commonly selected sectors for which technology needs were identified for the mitigation of GHG emissions. Agriculture and forestry, water management, and systematic observation and monitoring were the most commonly considered sectors in relation to technology needs for adaptation. The methods used to prioritize technology needs included multi-criteria analysis, the analytical hierarchy process, cost–benefit and risk–benefit analyses, use of optimization models, and questionnaire surveys, interviews and workshops with stakeholders. Although the roles of the stakeholders were often not clearly identified in the reports, they were involved mostly in setting the selection criteria for the technology needs, in selecting key sectors and in conducting the initial review. They were however infrequently involved in identifying next steps and in prioritizing the technology needs.

The synthesis report further revealed that in the energy sector, the most commonly identified technology needs for mitigation related to solar photovoltaic technology (grid connected and off-grid); biomass (forest residues and communal biowaste processing via biodigesters); large, small

and micro-hydropower plants; efficient lighting and water heating (solar and biomass); water pumping (solar and wind); efficient fuel-conserving stoves and ovens (solar, charcoal and biomass); and solar drying of agricultural products. Sectors identified as priority sectors for adaptation were agriculture and forestry, water, and coastal zones. In the agriculture sector, the most commonly identified technology needs for adaptation were related to crop management, efficient use of water and improving irrigation systems (micro-irrigation, creating networks of reservoirs and water resource management). With regard to forestry, technology needs included early warning systems for forest fires and technologies for afforestation and reforestation. In terms of coastal zones, hard and soft technologies were identified as needed to protect against and accommodate sea-level rise.

Significant constraints were encountered by countries during the preparation of the first round of TNAs which did compromise on the quality, comprehensiveness and utility of these reports. Existing in-country capacity has been identified as being insufficient to address the transfer of ESTs. In many countries access to information and awareness-raising, human, institutional and organizational capacity were identified as major impediments to the TNA process; implementation of policies and programmes; implementation and enforcement of appropriate regulations; and economic, market and infrastructure capacity. The synthesis report further indicated that capacity-building needs were sector specific they ranged from the need for skilled human labour to the need for institutional capacities to build efficient policies and a legal and regulatory environment. Most of the Parties identified a lack of clear governmental strategies for the implementation of the results of the TNAs.

Despite the weaknesses identified with the preparation of the first round of TNA reports, the reports nevertheless have served as an effective tool for national decision makers and other actors involved in the technology transfer process, not only to identify specific technology needs, but also point out the direction in which future policies and regulations will need to progress.

In this regard, the recently updated UNDP TNA handbook together with the three tools being developed within the framework of this project, viz., TNAssess, TechWiki and TNA Report Formulation Aid tool will greatly enhance the quality of the new TNA reports produced within the framework of this project. TNAssess is an interactive tool for technology prioritization for a country at the sectoral / sub sectoral level based on multi criteria decision analysis methodology. It will be used to facilitate a transparent, consultative, and user friendly interaction amongst stakeholders for prioritizing technologies both for adaptation and mitigation. TNAssess will require TechWiki, an online database of technological options required for mitigation and adaptation. Finally for recording the outputs from the TNA exercise in a standardized fashion. A digital tool- “TNA Report Formulation Aid Tool” is being developed. These tools are however still under development and UNEP will complement the efforts of UNDP and others in this direction. For the Terms of Reference for international consultancy assignments (see **annex A**)

UNEP’s comparative advantages, linkages to other initiatives

See REQUEST FOR CEO ENDORSEMENT/APPROVAL DOCUMENT - section G of Part II

3 Project Statement & Approach

Project Statement

As part of the GEF Strategic Programme on Technology Transfer, the project will provide targeted financial and technical support that assists developing countries in carrying out improved Technology Needs Assessments (TNA) within the framework of Article 4.5 of the UNFCCC. The intention is that assisted countries go beyond identifying technology needs narrowly and develop national technology action plans for prioritized technologies that reduce greenhouse gas emissions, support adaptation to climate change, and are consistent with national development objectives.

Project Approach

The present project has been designed to respond to Parties concern and demand and address the above mentioned barriers. The ultimate goal of the project is to provide the framework conditions, and adequate support, in order for GEF beneficiary countries to produce a grounded and useful TNA, with associated TAP fostering technology transfer in the adaptation and in the mitigation spheres. The new TNA Handbook (as revised by UNDP and UNEP) will guide the project development in terms of methodology and provide a general framework to countries conducting their TNAs. The project will also identify hurdles in using the revised TNA handbook and complement this tool with all needed methodological developments. To secure success and cost effectiveness, a sequential, approach will be followed, in which 15 countries will be initially selected. More countries will be gradually added when some experience has been accumulated and capacities have been created at regional level. It is also expected that tools and methodologies well tested will then help to scale the process up, hopefully before the end of the first year.

Global Focus

This global project which will covers 35-45 countries from Africa, Asia and the Pacific and Latin America and the Caribbean Selection of countries will take into consideration elements including size of the country / economy, mitigation potential, adaptation needs, national interest and enabling environment, expression of interest by countries, past efforts, institutional capacities, etc. Initial countries will be chosen with a goal of regional diversity; Ghana, Senegal, Uganda, Argentina, Bahamas, Thailand, Cambodia will likely be part of the first set of countries to field test the revised TNA Handbook. In any case the selection of countries will involve a consultative approach, demonstrated interest from targeted countries and approval from the Project Steering Committee (PSC). Final list of participating countries will meet the following criteria:

- **Regional balance:** With respect to representation from Africa, Asia and America, and at the same time ensuring adequate representation of vulnerable Islands.
- **Country size:** Considering that large developing countries already have reasonable access to technologies in the international market, are already active participants in the CDM

market, and may also get facilitation through sector approaches, the focus will be on medium-size and small countries.

- Balance between Mitigation and Adaptation: The TNA cover technology needs for both mitigation and adaptation and therefore the overall group of countries should provide a good balance between mitigation and adaptation needs.
- Interest shown by the countries and suggestions received from the various organisations, including from UNDP, UNFCCC, GEF, UNEP etc.
- For the first list of 15 countries, past record, familiarity and good experiences will also be important to ensure that good results can be obtained in the short time frame. It will secure carrying out TNA process successfully to other countries in the second round and after.

Project architecture

The project which has three principal components have a list of project activities outlined in the work plan (See REQUEST FOR CEO ENDORSEMENT/ APPROVAL DOCUMENT; Annex D).

The sequence of project activities includes:

- i. Preparatory work towards the establishment of project management framework, organization of Project Inception Workshop, and preparatory work at country level (including the formation of TNA National teams, appointment of national project managers etc.) in consultation with global project team.
- ii. Development / adaptation of tools and training material
- iii. Organization of capacity building workshops at the regional levels
- iv. Preparation and elaboration of TNAs in countries with support from project consultants.
- v. Mid term regional workshops and country workshops for sharing experiences and getting feedback from a wide range of stakeholders
- vi. Preparation of Guidebooks providing further details and examples of applied methodology as considered useful to reinforce or adapt the revised TNA handbook to country situation
- vii. Coordinating support for TAPs preparation and elaboration in countries
- viii. Dissemination and sharing experiences- website, workshops, reports, newsletter, and network etc

Note: For the additional countries, all steps, except (ii) and (vi) are followed, but capacity building workshops and support is provided by regional centers, who were involved in the first round (and hence developed capacity to support the TNA work, using the guidebooks and training material developed during the first round.

Component 1 Support for the development or strengthening of TNAs in 35-45 countries

National stakeholders will identify technologies needed at the country level with support from the project team. This will be done through provision of methodological tools (Component 2) and capacity building at regional level and in countries. Stakeholder consultations will form the basis to reach a consensus on technologies prioritized within sectors using approach given in revised TNA handbook however this may have to be complemented by other methodologies which provide information on costs and investment

requirements. Identification and analyses of barriers hampering technology transfer will be conducted with a view to create an enabling framework for transfer of selected technologies. The countries will be supported in barrier identification and analysis through guidebooks (Component 2), and regional and local consultants. The methodology for identifying technology given in revised TNA handbook and enabling framework for transfer of technologies will be adapted to country conditions and modified based on the feedback and experience in the first fifteen countries.

The support for next round of countries will get much more coordinated by the regional centers who will now use the tested revised TNA handbook for technology identification and guidebooks for barrier identification and analysis. The production and communication of TNAs and TAPs to the UNFCCC will take place towards project end while outputs from components 2 and 3 will provide necessary capacity and inputs to ensure that these documents are high quality and implementable.

A continued process of consultations and analyses, lead by the national TNA team will gradually lead to elaboration of a TAP, with practical and implementable steps towards reduction and elimination of barriers for clean technologies. The development of a TAP will be conducted through a process oriented approach, which will actively involve various stakeholders in the formulation of policy elements.

This TNA/TAP process will involve at an early stage as far as possible:

- Stakeholder meetings and consultations,
- Workshops with financial institutions, private sector entrepreneurs, government, academics and researchers
- Providing platform for bringing together technology providers and users.

The TAP will systematically address practical actions necessary to reduce or remove policy barriers, finance related barriers and technology specific barriers. The plan will also address necessary actions in terms of solving interactions between various barriers and address the necessary timing. While the TAP is developed by the national TNA team within the current programme, it should be recognized that adoption of the action plan by government lies outside the programme. It is therefore important to ensure a consultative political process throughout the development of the TNA in order to enhance the chances of later adoption by government, and consequently it is envisaged that elaboration of TNAs and TAPs will take up to two years.

Component 1 has the following outputs:

1. A network of participating individuals and institutions at national level informed and bringing capacity to secure national consultations in order to reach a national consensus on adequate technologies Identification and creation of stakeholders groups will be based on recommendations contained in the draft TNA handbook.
2. A synthesis of methodological applications and hurdles carried out at national level and serving as input for TNA elaboration
3. Between 35 and 45 TNAs including TAPs produced, identifying barriers to technology transfer at national level and means and actions to overcome them.
4. Feedback for TNA handbook update based on national experiences and processes.

All methodological materials will be made available on UNEP website in the English language while TNAs and TAPs will be made available in any of the six UN languages of the participating countries hard copies of all reports and materials will be made available to participants during workshops. While formal

reporting to the Convention will remain responsibility of the countries, the EA will keep the IA informed of progress and content of the TNAs and TAPs. The IA will keep the GEF informed of progress of project implementation.

Outcome: National consensus on priority technologies and agreement on a national action plan, institutional provision and capacity built for implementation and action plan update.

Component 2 Development of tools and provision of methodology information to support TNA and TAP processes

A simplified common approach to TNA will be developed based on the latest TNA handbook for training, capacity building and implementation purposes. The revised TNA Handbook has been developed by UNDP in consultation with UNEP, UNFCCC secretariat and EGTT. As a part of the guidebook, three tools are also being developed, viz., TNAssess, TechWiki and TNA Report Formulation Aid tool. TNAssess is an interactive tool for technology prioritization for a country at the sectoral / sub sectoral level based on multi criteria decision analysis methodology. It is to be used to facilitate a transparent, consultative, and user friendly interaction amongst stakeholders for prioritizing technologies both for adaptation and mitigation. TNAssess will require TechWiki, an online database of technological options required for mitigation and adaptation. Finally for recording the outputs from the TNA exercise in a standardized fashion a digital tool- “TNA Report Formulation Aid Tool” is being developed. These tools are however still under development and UNEP will complement the efforts of UNDP and others in this direction.

The revised TNA Handbook provides a basis for prioritizing technologies within sectors. It may also be important for countries to understand how to do an overall prioritization across sectors. Countries will also need detailed methodologies for analysis of technologies including economic analysis, estimation of marginal abatement costs, market assessment, barriers analysis and enabling framework creation. Enabling framework in turn may require methodology / guidance on how to analyze and address legal issues, access finance and so on. The TNA Handbook will be supplemented by developing required detailed methodologies and guidebooks for these areas.

Access to data on technologies will be needed by the countries. TNA handbook refers to TechWiki for this purpose. However, given that this is still under development UNEP would complement efforts in this direction by providing either data or links and access to data bases. This would also entail paying up for some data bases. While the databank on technologies for climate change mitigation options can be based on dynamic extraction from other existing databases, the wide range and the low level of standardization and variable performances for adaptation technologies pose a specific challenge. To address this challenge, the project team will draw on a team of experts within UNEP Risoe Centre and outside. Hence the project will need to invest upfront to access this information.

This component has the following output:

1. A tool to prioritize mitigation options based on cost effectiveness, existing potential, resource availability and relevance for national situations developed and presented.
2. A tool to prioritize adaptation technological options based on climate change impacts as well as human, economic, social and costs related aspects developed and presented.
3. A simple and efficient market assessment tool made available
4. A process to apply the tools at national level agreed upon.

5. Access and links to information database elaborated and serving as a base for technology specification in terms of performance, cost and availability.
6. Reporting template for TNA elaborated.

These tools will allow each country to focus on the identification, adaptation and development of technologies best suited to their national priorities. Results of work will be presented and further elaborated during specialized working groups involving national representatives from supported countries.

Outcome: Methodologies which complement the revised TNA Handbook and facilitate technology information available to countries.
Capacity developed through workshops and guidebooks, Access to data. Regional networks ensure that critical technology information is available and a cooperation mechanisms to share TNA experiences is in place.

Component 3 Establishment of a cooperation mechanism that aids preparation and refinement of TNAs and TAPs implementation and dissemination

The challenge-and value added- of the present initiative is to prompt synergies and to enhance cost effectiveness for implementation of TNAs. It requires initial investment to build mechanisms securing North South and South South coordination and technology transfer in the end. The TNAs and TAPs, once synthesized will provide a world-wide vision of the most urgent and impactful technologies needed by GEF beneficiary countries to address urgent challenges with respect to mitigation and adaptation. In order for this synthesis to be of relevance and trigger action, there is a strong need to invest in coordination, exchange of experience, coherence tool building, etc.

Because of the very nature of technology transfer, national networks are insufficient and need to be reinforced by a range of regional and international institutions specialized in technology transfer. National networks need to establish links with their neighbor counterparts and sometimes links with national institutions in other parts of the world. Technology Transfer from say Asia to Africa can be extremely meaningful for some specific technologies. The project will put in place the mechanisms for this cross fertilization to take place. As far as TNAs and TAPs processes are concerned, some countries will be more successful than others and it is important to identify key factors for success, indicate useful path and disseminate these experiences to other countries.

To address these needs, regional centers of excellence will be identified in each region to promote cooperation, build capacities in countries and region, share knowledge and experiences, and facilitate dissemination (see part III for details). A number of the project activities; viz., capacity building including training and dissemination will be carried out through the regional centers. A network of participant countries, organizations, knowledge centres and other interested stakeholders will also be created to foster cooperation and dissemination.

Dissemination will also be carried out through a number of cross exchange regional workshops (1- 2 in each region) for the benefit of stakeholders in the region. The workshops will also serve as a forum for exchange of views and sharing of knowledge, and building networks at regional level. An international workshop to disseminate and share views with stakeholders at large will also be conducted at the end of the project. The workshop will also serve as forum to disseminate the lessons learnt and synthesis report

from the project. Other dissemination activities will be through the project website, newsletter, and presentations / publications in various fora, as and when an opportunity arises.

As the present project plans to support 35 to 45 countries, an important outcome of the project is to secure replicability. Hence it will be ensured that information from the project is readily available to other non participating countries, and they also have access to developed tools and a clear roadmap for replication.

A newsletter will be elaborated and sent to all GEF beneficiary countries. The newsletter will inform about progress of the projects and provide contacts at regional and international level.

An international workshop will take place at project end involving key partner countries in the project with opportunity for representatives from countries supported by and outside this initiative to attend and benefit from the successful experiences.

Support on request will be provided by the project team (UNEP, URC, Regional partners, and internationally recruited consultants), during project implementation and a separate mechanism for continued support after finalizing the TAPs will be proposed, although outside the scope of the present initiative.

Outputs

1. A Network involving both national and supra national institutions recognized for their success in technology transfer activities established and operational
2. Proven approaches to elaborate good quality TNAs developed. Institutional responsibilities set up. Capacities built to elaborate, implement and revise TNAs and associated TAPs.
3. Replication approach available to all GEF beneficiary countries together with a proposed mechanism for interactive support.
4. A “Best Practices and Lessons Learnt report” from the project produced and disseminated.
5. Synthesis report from the project produced and disseminated.

Outcome: Increased national and interregional cooperation on technology transfer as a mean to facilitate preparation of TNAs and implementation of TAPs

Stakeholder Analysis

The global Technology Needs Assessment project involves a wide range of stakeholders both at the national level in the 30 to 45 countries supported and those within partner institutions including regional centres of excellence. In eligible countries, national teams involving all relevant institutions and agencies as well as experts according to national circumstances would be at the core of the project. Most probably, Ministries of Environment and Natural Resources, Energy, Planning, Technologies as well as research centres linked to Climate Change Mitigation and Adaptation, Ministry will be involved. Private firms importing and or production mitigation and or adaptation technologies will be associated. So will potential financiers in-country.

Critical to the successful implementation of this project is UNEP DGEF, as the GEF Implementing Agency of the project who will place at the disposal of this initiative its extensive experience in supporting climate change enabling activities including the preparation of TNAs.

UNEP DTIE and the UNEP Risoe Centre on Energy, Climate and Sustainable Development involved in coordinating efforts, providing methodological guidance and technical expertise to the countries on the themes related to technology needs assessments and associated Technology Action plans. They would also make available to the project their extensive experience in technology transfer related activities and networks, financial support and cooperation with private partners, both from industry and from the same finance sector.

At regional level it is envisaged that at least 4 regional centres will be involved in the exercises, first as recipient of training and information, and at a later stage in the project, in providing support directly to the countries. These regional centre are well recognized institutions such Technology (AIT), Centre for Energy Environment Resource Development (CEERD, Bangkok), The Energy & Resource Institute (TERI), PELANGI (Indonesia), Energy Research Centre (ERC, South Africa), CSIR (South Africa), ENDA (Senegal), African Technology Policy Studies Network (ATPSN), Sahara and Sahel Observatory (OSS), SouthSouthNorth, Fundación Bariloche, CARICOM, OLADE (Ecuador) . They will in fact benefit from the present initiative in terms of capacity building in the regions and regional analysis and action. For a global initiative of this kind which envisions a wide range of stakeholders, an exact list of possible stakeholders in up to 45 countries at this stage is premature to establish in a meaningful manner.

The impact of the present project on civil society, or gender is limited during project execution while indirect impacts, which could be provided by effective technology transfer, can be substantial. The classical example is the replacement of fuel wood, usually gathered by women, by modern energy. Studies demonstrate that the time dedicated by women to cooking and household tasks can be divided by 5 through introduction of modern energy, hence leaving time for self education, productive activity and children education.

Technologies related to agriculture, transport and consumer goods, do have a close inter relation with civil society and their introduction will both need association of civil society and could modify the way in which certain sectors are governed.

However, the present project is focussed on reporting to the UNFCCC on technology needs, and identifying barriers as well as remedial actions, which would allow technology transfer to take place. Hence, while the capacity building elements is very strong and focussed on producing high quality TNAs involving all relevant stakholders at national levels as well as provide the roadmap for technology adoption, , implications on gender on one hand and civil society on the other will be seen when implementing the identified measures.

Partnership Analysis

As other GEF initiatives, the present GEF project on Technology Needs Assessment is primarily a partnership. External partners can be classified in two categories at this stage. However, slippage from category 2 to 1 can occur at some stage on spontaneous basis.

The first category is made of regional centres of excellence. Those centres, located in-region, will first be recipient of knowledge and will be chosen to develop their internal capacity on the specific topic of Technology Transfer, Technology Needs Assessments, and Technology Action

Plans. The identified centres are as follows: Asian Institute of Technology (AIT), Centre for Energy Environment Resource Development (CEERD, Bangkok), The Energy & Resource Institute (TERI), PELANGI (Indonesia), Energy Research Centre (ERC, South Africa), CSIR (South Africa), ENDA (Senegal), African Technology Policy Studies Network, OSS SouthSouthNorth, Fundación Bariloche, CARICOM, OLADE (Ecuador) and others. UNEP Risoe Centre has a long term working relationship, through other projects, such as the capacity building project for CDM (CD4CDM), which has been executed in 19 countries. Regional experts will be trained through training workshops, where common understanding of approach and methodologies will be achieved

In a second phase of the project, these centres will become full fledged partners of the TNA project and will provide support to countries carrying out their TNA and seek advice as and when required from UNEP DTIE and the UNEP Risoe Centre on Energy, Climate and Sustainable Development. Their specific theme complement those of the core partners of UNEP GEF, UNEP DTIE and UNEP Risoe: These centres have a solid reputation in region and usually work with a network of experts in national institutions both on mitigation and adaptation. In most instances they operate an observatory and data collection and analysis role at regional level. Staffed with highly trained expertise, usually both from the region itself and from abroad, they offer the sustainability a GEF project is looking for from an institutional viewpoint.

The second category comprises leading institutions in up to 45 countries supported by the present project for carrying out their national Technology Needs Assessment together with Technology Action Plans. They are recipient of information and methodologies, the project aims at building their internal capacity and they are key to project success insofar as they are ultimately leading the process resulting in the production of high quality TNAs. The project takes 15 countries to pilot the exercise. It is very desirable that these 15 countries, or at least a portion of them, would share their experience and support their neighbour countries in carrying out their own TNAs. A clear objective of the project is to create networks which allow sharing of experience and lessons.

Socio Economic contribution including Gender and Poverty Alleviation

In addition to broadly recognized importance of technology transfer and adoption for climate change mitigation and adaptation, the impact of walking the technology paths for economies in development is also acknowledged as a crucial element for economic and social development. The concrete impacts of the present initiative are two folds:

As direct impact of the project, better coordination in country amongst institutions related to technology transfer and adoption, increased awareness of the opportunities and associated benefits of technology adoption by decision makers and increased local capacity to assess adequate, priority technologies according to country needs, identify barriers to their adoption and recommend action are directly related to project activities.

Another important aspect is increased insertion into regional context with relation building with regional type institutions of a wider range of national institutions and experts, and also, development of networks with neighbouring countries.

If the process is successful, which ideally should not be the case for 100% of supported countries, but which will certainly be the case for a fair proportion, actual transfer and adoption of technologies does yield local benefits which can be classified under very broad categories, all in line with UNEP broad principles and climate change strategy.

The broad range of technologies subject to the present project and their selection by countries does not allow to categorize precisely indirect benefits linked to the present initiative. The following presents a broad vision of what the benefits will be by category.

- Technology adoption will increase productivity and can for some technologies decrease the work load of women.
- Adaptation of technologies will require local inputs, and hence yield local economic benefits in terms of capacity building on one hand and employment on the other. Technology deployment will yield economic and financial benefits.
- Technologies related to agriculture might reduce the risk related to food shortage and hence increase health of concerned populations.
- Entire sectors such as tourism, concerned with coastal risks, will benefit from reduced climate risk and warning and management system as well as planning exercises informing private decision making. In certain areas or for certain countries such as SIDS, tourism represents a sizeable proportion of local income: Up to 80%.

The quantitative analysis of impact of the present initiative would require a specific study which is beyond the scope of the present project both in terms of budget and in terms of horizon.

Crucial success factors

The prerequisite that must be met for project success are closely linked to sustained interest in technology transfer at national level by national decision instances. Any major disruption, whether social, economic, health or food related, will understandably, transfer attention and effort to the immediate urgent matters at hand. There is however no mitigation strategy vis a vis such risks.

At this stage there is no specific provision for social safeguards or environmental trade-offs. However, in executing this project, UNEP will strive to bring attention rise awareness on themes related to environmental impacts and assessments, social/indigenous population involvement when planning technology adoption and Gender related issues.

Logical Framework

See REQUEST FOR CEO ENDORSEMENT/APPROVAL DOCUMENT; ANNEX A: Project results framework

Risk Analysis

See REQUEST FOR CEO ENDORSEMENT/APPROVAL DOCUMENT

(i) Part II - PROJECT JUSTIFICATION, section E (Indicate risks, including climate change risks that might prevent the project objective from being achieved and if possible including risk mitigation measures that will be taken)

(ii) Annex A - PROJECT RESULTS FRAMEWORK : Column 6

4 Reporting & Evaluation

Progress & Financial Report

M&E PLAN

See REQUEST FOR CEO ENDORSEMENT/APPROVAL DOCUMENT - section G of Part I

5 Project Budget

See REQUEST FOR CEO ENDORSEMENT/APPROVAL DOCUMENT - APPENDIX 1 - RECONCILIATION BETWEEN GEF ACTIVITY BASED BUDGET AND UNEP BUDGET LINE (GEF FUNDS ONLY US\$)

Project Organizational Chart

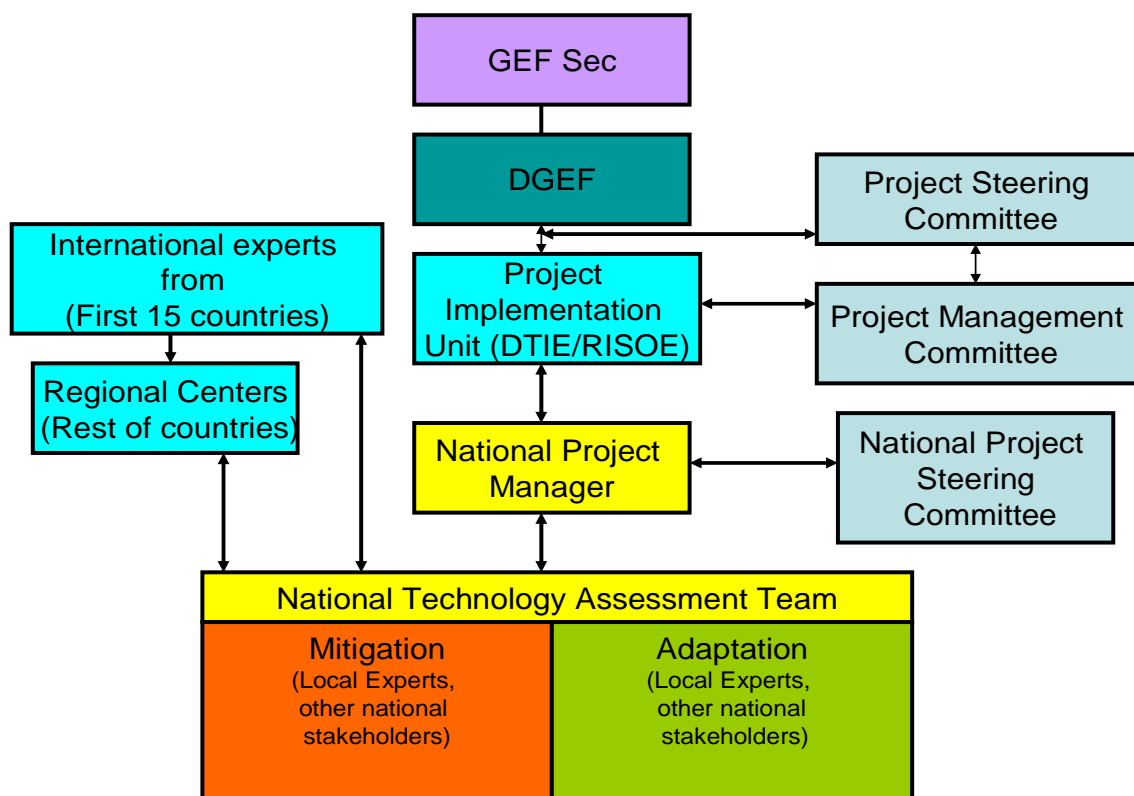


Fig. 1 Project Organizational chart

Project Management

A Project Steering Committee (PSC) is composed of a member of the GEF Secretariat, a member of the EGTT a member of the UNFCCC TT Clear, UNEP, UNDP, the World Bank and UNIDO. UNEP Risoe Centre represented by the project manager will also participate without right to vote. The PSC chaired by UNEP will provide strategic guidance on issues such as country selection and technology orientation coordination with relevant initiatives of other agencies and with the other components of the Poznan Strategic Program on Technology Transfer referred to it by the Project Management Committee. The Project Implementation Unit (PIU) which will serve as the secretariat of the PSC, will provide to the PSC annual overview of progress of project implementation. The PSC will provide guidance to the PIU based on information given to it. The PSC will be involved in selection of countries based on the advice of the PMC and the criteria set out in the project document. The PSC will meet once a year and can be called as needs via teleconference. The project will cover costs of PSC attendance of country representatives.

Project Management Committee (PMC) composed of UNEP/DGEF, UNEP/DTIE and UNEP Risoe Centre would work to provide project management and implementation guidance consistent with their respective roles of the Implementing and Executing Agency of the project. The PMC will be responsible for oversight of project management and delivery of the coming years work. To provide oversight the PMC will need to receive and assess feedback from the countries on quality of support received from the international experts and regional centers and quality of the TNAs and TAPs produced by national teams. The PIU will organize independent questionnaires for completion by country teams on their needs and observation for support; as well as the result of the TNA and TAP quality reviews, and ensure that these are fed directly back to the PMC. The PMC will meet first with PIU to review project progress and plans. Based on results of questionnaires, quality of review and other information, the PMC will agree on the coming years workplan and budget. The PMC will also advise the PSC on country selection.

UNEP/DGEF shall in its role as GEF Implementing Agency, provide project oversight to ensure that GEF policies and criteria are adhered to and that the project meets its objectives and achieves expected outcomes in an efficient and effective manner. Project supervision is entrusted to the Director of DGEF who discharges this responsibility through the assigned Task Manager who represents the Director of DGEF on the project steering committee. Project supervision missions by the Task Manager and/or Fund Management Officer shall constitute part of the project supervision plan. UNEP/DGEF would perform the liaison function between UNEP and the GEF Secretariat and report on the progress against milestones outlined in the CEO approval letter to the GEF Secretariat. UNEP/DGEF shall inform the GEF Secretariat whenever there is a potentially substantive co-financing change (i.e. one affecting the project objectives, the underlying concept, scale, scope, strategic priority, conformity with GEF criteria, likelihood of project success, or outcome of the project). It shall rate, on an annual basis, progress in meeting project objectives, project implementation progress, risk, and quality of project monitoring and evaluation, and report to the GEF Secretariat through the Project Implementation Review (PIR) report prepared by UNEP/RISOE. UNEP/DTIE will ensure, UNEP/RISOE liaises with all countries in the project in preparing and rating the annual PIR. DGEF will also ensure that the Evaluation and Oversight Unit of UNEP arranges for an independent terminal evaluation and submits its report to the GEF Evaluation Office.

UNEP/DTIE shall take responsibility for the execution of the project in accordance with the objectives, activities and budget and deliver the outputs and demonstrate its best efforts in achieving the project outcomes. It shall also address and rectify any issues raised by DGEF with respect to project execution in a timely manner. It shall also support the project mid-term review as an adaptive management tool and develop a management response to the review. UNEP/DTIE shall collaborate with the project terminal evaluation, and provide all information requested by the evaluation team. For a multi-country project such as the global TNA project, it shall inform UNEP/DGEF in the event that one or more countries withdraw from the project. DGEF shall in turn notify the GEF Secretariat.

The URC is the main UNEP partner and shall together with the UNEP DTIE constitute the Project Implementation Unit (PIU). It hosts the Project Team, provides high level technical inputs

and organizes the tasks at global level as well as securing capacity building of regional and national bodies. The project team also serves as secretariat to the PMC and PSC.

Regional Centers are recipient of project training to builds their capacity during the first half of the project to become providers of support to national teams on an increasing basis. The project provides financial support to regional centers to fulfill this aim. The country teams are carrying out TNAs and TAPs at national level and to this end, receive technical support from the global and later regional project teams. Financial support is provided to the country teams by the project.

ANNEX A

TERMS OF REFERENCE

TECHNOLOGY NEEDS ASSESSMENTS

THE FOLLOWING TERMS OF REFERENCE HAVE BEEN ELABORATED BASED ON THE CURRENT KNOWLEDGE OF GAPS IN THE TNA PROCESS INCLUDING TAP ELABORATION. THEY WILL BE FINE TUNED BY THE PROJECT IMPLEMENTATION UNIT. GIVEN THE SCOPE OF THE PRESENT PROJECT AND THE NEED TO MAXIMUM COST EFFECTIVENESS, TASKS DESCRIBED BELOW MIGHT BE CARRIED OUT BY MORE THAN ONE CONSULTANT.

1. Methodology (including market assessment, economic analysis, multi criteria tool etc.)

The objective of the assignment is to provide clear guidance on the methodology which can be applied at national level to prioritize technologies presenting the maximum benefits both from the global (mitigation) and the national (economic social, environment) perspective and assess markets for technologies. While the methodology is broadly described in the TNA handbook, several components needs to be elaborated and translated in such a way that it can be applied by national teams in a relatively simple manner. Some tools such as TNAssess (a technology prioritization tool, that uses multi criteria analysis (MCA) mentioned in the TNA handbook, is yet not available, and hence a tool for multi criteria analysis will need to be developed to prioritize technologies. Country teams will also need to be supported during application of the methodology

The task of the consultant will be as follows:

- Assess the tools that already exist, including for multi criteria analysis for technology prioritization, market assessment of technologies, and economic analysis of technologies.
- Develop the required tools and provide user friendly versions of the tools allowing national counterparts to obtain meaningful results with simple steps.
- Field test the approach (tools) with a minimum of 3 country teams and fine tune the tools.
- Work in close cooperation and train counterparts in at least 3 regional centres of excellence in Asia, Africa and America.
- Train and support regional counterparts and national teams of 15 countries in gaining capacity to apply the tools.
- Work in close collaboration with the mitigation and adaptation experts to synthesize their input in the tools produced.
- Participate in training workshops

The consultant will produce the required methodological tools, ready to use, and including written material, and a report on field tests carried out. The consultant will also prepare guidelines for preparing the training materials and for future use by the regional centres.

Minimum qualification

The candidate will have a university degree in economics, or related discipline
In depth knowledge of energy system modelling tools and decision making techniques.
Knowledge of market assessment computer based tools
Proficiency in English

At least 15 years of experience in the public or the private sector in methodological / analytical work or related activities.

Candidates from GEF beneficiary countries will be considered favourably.

2. Mitigation Technologies

The objective of this mission is to provide an overview of what exists in terms of information sources for mitigation technologies and facilitate assessing their potential in the concerned countries and access to these information sources. This also includes coordinating national exercise aiming at improved knowledge and understanding of these technologies, their economic and environment benefits and secondly to establish cost criteria for which will be an input for prioritization of low carbon technologies.

Tasks to be performed are as follows:

- Survey of existing databases on mitigation technologies
- Facilitation of information to countries with respect to mitigation technologies.
- Elaboration of cost criteria for prioritization of low carbon technologies (as given in the TNA handbook).
- Supporting countries to develop cost effectiveness criteria which can serve as the basis for prioritization amongst low carbon technologies
- Review and consolidate abatement costs for different countries
- .Work in close cooperation and train counterparts in at least 3 regional centers of excellence.
- Support the countries in their prioritization exercise
- Work in consistency with methodology expert.
- Participate in workshops
- Develop guidelines for use by regional centres for training other countries.

The consultant will review mitigation related TNA analysis for 15 countries.

Minimum qualification

University degree in Engineering and or Economics

Knowledge of English is essential

In depth knowledge of energy systems and familiarity with models.

At least 10 years of experience in energy and or industry related to renewable energy and or energy efficiency.

Candidates from GEF beneficiary countries will be considered favourably.

3. Adaption Technologies and Options

Adaptation technologies are more dispersed than mitigation ones, and databases are hence less readily usable for the TNA/TAP exercise. Nevertheless given the urgency of the needs, the consultant will provide an overview of what exist and of what type of technology is well adapted to reduce climate change risk per type of issues witnessed at national level: i.e. coastal zone, crop improvement, water management, flood control, infrastructure protection etc.

Tasks to be performed are as follows:

- Survey of existing databases on adaptation technologies
- Facilitation of information to countries with respect to adaptation technologies.
- Elaboration of cost criteria for prioritization of technologies (as given in the TNA handbook).
- Supporting countries to develop cost effectiveness criteria which can serve as the basis for prioritization of technologies for adaptation
- .Work in close cooperation and train counterparts in at least 3 regional centers of excellence.
- Support 15 countries in their prioritization exercise
- Participate in workshops
- Develop guidelines for use by regional centres for training other countries.

The consultant will review adaptation related TNA analysis for 15 countries.

The consultant will review and clear 15 adaptation prioritization exercises serving as input to TNAs. A report on needed improvement in information on adaptation technologies and a synthesis of innovation in approaches to choose adapted technologies will also be produced.

Minimum qualifications:

University degree in water management, agronomy and/or economics.

Proficiency in English

At least 15 years of experience in one of the priority fields for adaptation (Water, infrastructure, agriculture) with a focus on climate risk mitigation

Candidates from GEF beneficiary countries will be considered favourably.

4. Policies (Economic instruments, awareness and information etc.)

The objective of the mission is to highlight conditions in terms of policy, economic instruments, awareness and information, needed for effective transfer of the technologies identified in the TNA exercises.

Tasks to be performed:

- Prepare framework for analysis of policy barriers and measures to overcome them.
- Define optimal policy conditions for effective technology transfer based on expert knowledge and interviews with technology providers in project countries and abroad. These include fiscal conditions, property right, standards and related regulation, accounting rules and exceptions, awareness level, etc.
- Prepare guidelines for analysis of policies and related barriers for technology transfer and measures to overcome them.
- Provide training and work with regional centres and 15 countries in analysing policies barriers and preparing package of policies to facilitate technology transfer. Test applicability of recommendations to improve the policy environment at national level with the aim of finding the best applicable solution in the country concerned.
- Work in close cooperation and train counterparts in at least 3 regional centers of excellence.
- Participate in a minimum of 3 workshops

Ultimate outputs will be a guide to improve policy environment and favour technology transfer, with a focus on causality related lessons learned and 15 high quality action plans for policy environment improvement.

Minimum qualification

University degree in economics, finance, law and/or information management

Expert on technology transfer with a minimum of 10 year experience within a public institution in charge of technology development and or transfer.

Fluent in English.

Candidates from GEF beneficiary countries will be considered favourably..

5. Financing and financial instruments

The objective of the mission is to characterize the conditions under which technology transfer can take place from the financial standpoint and identify the measures that can be taken at national level to meet these conditions. While technologies do require financing, various type of financing instruments do exist today, and their scope is expanding rapidly. They include various types of loans/ syndication, equity raising instruments, vendor financing, JV options, carbon finance etc. The aim is not to micro analyze the options existing in 15 countries, but rather characterize the minimum conditions which should exist for technology transfer to take place in a country, provide tools to analyze the gaps or barriers and identify options allowing to fill these gaps.

Tasks to be performed:

- Prepare a framework for analysis of financial barriers to technology transfer and measures to overcome them.
- Provide expert knowledge on minimum conditions required to achieve technology transfer.
- Prepare guidelines for establishing a financial framework to facilitate financing of technology transfer
- Provide training and work with regional centres and 15 countries in analysing financial barriers and creating an enabling financial framework for technology transfer. Provide a matrix showing which market conditions can, in various combinations, meet the conditions for technology transfer to take place
- Participate in training workshops
- Work in close collaboration with a minimum of 3 regional centers of excellence

The consultants will produce a report highlighting minimum finance related conditions to allow technology transfer and secure high quality outputs of 15 financial action plans to serve as inputs in TAPs.

Minimum qualifications

University degree in economics and finance

Proficiency in English

Minimum of 10 years experience in the finance sector in developing financial models for supporting new markets and technologies.

6. Legal, regulatory environment & Institutional Structure

For effective transfer of mitigation technologies a number of legal and regulatory conditions are key including licensing, feed in tariffs and conditions, energy supply contracts, etc. Both the numbers and the process under which institutions operate are equally important. Also when envisioning TAPs implementation, institutional reform, responsibility sharing aspects and decision making processes are important aspects.

Tasks to be performed

- Provide expert knowledge on legal and regulatory conditions needed for technology transfer.
- Prepare a framework for analysis of gaps by the countries.
- Prepare guidelines for establishing a facilitating legal and regulatory framework for technology transfer, considering the global regime in this area.
- Support country teams in their analysis of gaps at national level.
- Provide training and work with regional centres and 15 countries in analysing gaps and developing enabling regulatory regime.
- Work in close collaboration and train a minimum of 3 regional centers of excellence.
- Propose institutional analysis tools and assist in a minimum of 3 workshops.
- Review 15 TAPS for quality assurance.

Minimum qualifications

University degree in Environmental science, law or economics

Knowledge for SWOT and other analysis tools

Proficiency in English

Minimum 10 years experience in public institutions in various regions with a focus on legal and regulatory reforms.

Candidates from GEF beneficiary countries will be considered favourably.

7. Technology Action Plan (Template and support)

The TAP will systematically address practical actions necessary to reduce or remove policy barriers, finance related barriers and technology specific barriers. The plan will also address necessary actions in terms of solving interactions between various barriers and address the necessary timing.

The Technology Action Plan is a new feature in the Technology Need Assessment of the GEF. It is the tool which should serve as support to actual implementation of technology transfer based on the thorough analysis carried out. This document, conceived, ideally to be approved and endorsed at highest national level in each of the countries concerned, should contain all the elements needed to both understand the priorities, grasp the benefits and co benefits, envision policy and institutional reforms needed to enhance technology transfer, and contain the tools to follow action and evaluate impacts of implementing such a plan. Concrete and practical in essence, it should also be concise enough to be read by high level decision makers.

Hence, while the technical exercise will be crucial to qualify accurately the potentials and needs, assess the barriers and elaborate barrier removal action plans, this formalisation exercise is an essential tool towards practicality and in the end implementation of the plan.

Some level of homogeneity will also mean meaningful reporting to the convention and easy aggregation of the exercise for the parties to the same.

Tasks to be carried out are as follows:

- Develop a process oriented approach involving various stakeholders and a template for preparation of the Technology Action Plan (TAP).
- Providing training on preparation of TAP comprising targeted actions for creating an enabling framework for technology transfer and diffusion through barrier identification and removal strategies to the countries and regional centres.
- Facilitate preparation of TAPs in initial 15 countries.
- Prepare guidelines for preparation of TAPs. The consultant will be in charge of supervising the elaboration of national TAP documents based on the above template

Minimum qualifications

University degree in engineering, environmental science, law or economics.

Proficiency in English

Minimum of 5 years experience in national planning in various regions with a focus on technology transfer

8. Capacity Building- Development of training and support material

Base on the various output of technical nature, the challenge of the present initiative and the aim of the present consultancy service, is to effectively transfer the knowledge and associated tools to national teams, composed of diverse population, from various countries, with different culture, languages, background and specialties.

Advanced capacity building techniques, based on participative approaches, are successfully applied at international level both in the public and the private sector. They entail the elaboration of capacity building material used during workshops by country teams and leading the exercise during the workshops.

The present initiative contemplates 6 training workshops. The consultants will, for each workshop

- Elaborate on material produced during the project, in particular by project team and specialized consultants to produce specific capacity building tools to be used during training workshops. This includes preparation of training materials based on the reports and guidelines produced by the specialised consultants.
- Conceive simplified national exercises, to be carried out in maximum half a day,
- Work in close cooperation and assist in training 15 national teams and build capacity of the regional centers of excellence to prepare them to take an active part in subsequent training / capacity building workshops and country support.
- Provide an adapted agenda for each training workshops securing sustained interest, effective knowledge transfer, integration and full comprehension of the transferred knowledge through carrying out test exercises, and feed back procedure towards continued improvement of workshop organization.
- Assist the workshops, present the philosophy of the workshop, organize and plan intervention of various experts and participants, organize exercises, support knowledge integration process
- Produce workshop report including results of the participants exercise, and feed back from participants.

Minimum qualifications

University degree in economics, environmental science or engineering

Proficiency in English

Knowledge of capacity building tools Minimum of 10 years experience in capacity building in various regions. Experience in supporting national planning exercises will be a plus.