



PROJECT IDENTIFICATION FORM (PIF) ¹

PROJECT TYPE: FULL-SIZE PROJECT
 TYPE OF TRUST FUND: GEF TRUST FUND

PART I: PROJECT IDENTIFICATION

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|---|---|------------------------------|--|
| Project Title: | Preparation of Third National Communication (3NC) and other new information to the UNFCCC | | |
| Country(ies): | India | GEF Project ID: ² | 4673 |
| GEF Agency(ies): | UNDP | GEF Agency Project ID: | 4603 |
| Other Executing Partner(s): | Ministry of Environment and Forests | Submission Date: | 09/14/2011 January 13, 2012 January 25, 2012 |
| GEF Focal Area (s): | Climate Change | Project Duration (Months) | 60 |
| Name of parent programme (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/> | n/a | Agency Fee (\$): | 901,060 |

A. FOCAL AREA STRATEGY FRAMEWORK³:

| Focal Area Objectives | Expected FA Outcomes | Expected FA Outputs | Trust Fund | Indicative Grant Amount (\$) | Indicative Co-financing (\$) |
|--------------------------------------|---|--|------------|------------------------------|------------------------------|
| CCM-6 (select) | Outcome 6.1: Adequate resources allocated to support enabling activities under the Convention | Output 6.1: Countries receiving GEF support for national communication, etc. | GEFTF | 8,560,074 | 25,740,000 |
| Sub-Total | | | | 8,560,074 | 25,740,000 |
| Project Management Cost ⁴ | | | GEFTF | 450,530 | 500,000 |
| Total Project Cost | | | | 9,010,604 | 26,240,000 |

B. PROJECT FRAMEWORK

| Project Objective: To prepare the Third National Communication and other new information required to meet obligations under the UNFCCC | | | | | | |
|--|------------|--|--|------------|------------------------------|------------------------------|
| Project Component | Grant Type | Expected Outcomes | Expected Outputs | Trust Fund | Indicative Grant Amount (\$) | Indicative Co-financing (\$) |
| 1. India's National Circumstances | TA | 1.1 Updated Report on India's National Circumstances | Detailed report with the following information 1. India's development priorities, policies and programmes at national and state level. 2. Geography, climate, economy and the climate sensitive sectors and communities. 3. Existing institutional arrangements relevant to the periodic conduct of | GEFTF | 430,936 | 950,000 |

¹ It is very important to consult the PIF preparation guidelines when completing this template.

² Project ID number will be assigned by GEFSEC.

³ Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

⁴ GEF will finance management cost that is solely linked to GEF financing of the project.

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| | | | GHG inventory. 4. Progress on national actions to reduce GHG emissions. | | | |
| 2. National GHG Inventory | TA | 2.1 Information of GHG inventory for 2012 and trend for 2000 to 2012. 2.2 Increased accuracy of GHG inventory through the use of tier-III methodologies for most sectors. 2.3. Strengthened and streamlined National institutional structure for long term National GHG inventory and the estimation of GHG emissions. | 2.1.1. Documented inventory of GHG emissions for (a) Energy (b) Transport (c) Industry (d) Agricultural (e) Land-Use Change and Forestry, and (f) Waste sectors. 2.1.2. Completed National Activity Data and established Emission Factors database and information for all source categories. 2.2.1. Documented national and other methodologies adopted for the GHG inventory. 2.2.2. Developed and implemented tier III methodologies and models for inventory of GHG emissions in some sectors, including the adoption of the 2006 IPCC inventory guidelines where relevant. 2.2.3. Adopted methodological approaches for uncertainty estimation as per the IPCC Good Practice Guidance and other appropriate methodologies. 2.3.1. Established National Inventory Management System (NIMS) through sectoral institutions and network of supporting research institutions 2.3.2. Established Quality Control and Quality Assurance Procedures. 2.3.3. Published and disseminated GHG inventory. | GEFTF | 1,479,360 | 3,140,000 |
| 3. Impacts and vulnerability assessment and adaptation measures | TA | 3.1. Improved climate change projections with the use of advanced and updated Regional Climate Change models. 3.2. Availability and clearer understanding of climate scenarios for India. | 3.1.1. Developed and applied advanced models to profile climate variability at district level 3.1.2 Climate variability maps at district level for India. 3.2.1. Documented climate scenarios (short-, medium-, and long-term) based on | GEFTF | 1,935,195 | 8,400,000 |

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| | | <p>3.3. Improved understanding of projected climate change impacts for all relevant sectors.</p> <p>3.4. Improved understanding of, and appropriate actions planned for addressing, vulnerability to climate change at different sectors and regions.</p> <p>3.5. Increased understanding of Adaptation framework, measures and possible projects.</p> | <p>Multiple Global climate models (GCM) / Regional Climate Models (RCMs) and climate change parameters at RCM grid level.</p> <p>3.3.1. Documented projections and results of impact assessments of climate change based on multiple GCMs for different sectors in India.</p> <p>3.4.1. Developed multiple impact assessment models for adoption⁵</p> <p>3.4.2 Developed district level vulnerability assessment reports</p> <p>3.5.1. Developed spatial vulnerability profiles in GIS format at district level based on vulnerability indices for different sectors, sub sectors at district covering parameters such as, cropping system and watershed level.</p> <p>3.5.2. Documented ranking of most vulnerable natural ecosystems, crops, and water resources at district level for India.</p> <p>3.5.3. Adaptation framework describing measures currently implemented and proposed measures.</p> <p>3.5.4. Adaptation action plans, including strategies for implementation and project profiles for key adaptation options.</p> | | | |
| 4. Measures to mitigate climate change | TA | <p>4.1. Increased understanding of GHG mitigation policies and measures at national and state level.</p> <p>4.2. Increased understanding of gaps and constraints pertaining to financial, technical and capacity needs to address</p> | <p>4.1.1. Documentation on national climate change mitigation policies.</p> <p>4.1.2. Improved future GHG emission scenarios for India using up-to-date information.</p> <p>4.1.3. Mitigation potential for energy and land-use change</p> <p>4.1.4. National climate</p> | GEFTF | 1,144,045 | 2,500,000 |

⁵ These are based on: (a) Dynamic global vegetation models, INFOCROP, Cropsyst, SWAT etc.; (b) Analysis of impacts on cropping system, river basin, forest type scales assessed at district level; and, (c) Impacts assessments for short 2030, medium 2050 and long 2075 terms for all relevant sectors.

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| | | climate change. | change mitigation action plan and state level climate change action plans. 4.2.1. Report on the gap analysis and constraints pertaining to (a) access to technologies and technology transfer arrangements, (b) financial assistance needed for technology transfer and capacity development, and (c) investment requirements for mitigation measures based on the national and state climate change action plans. 4.2.2. Completed technology needs assessment (TNA) for different sectors. 4.2.3 Documentation on the detailed information of key mitigation-adaptation technology needs, availability of those technologies in the country, national R&D programmes, implementation & monitoring of activities, technology transfer needs, and financial support needed along with limitations. | | | |
| 5. Other information relevant for the preparation of the 3NC | TA | 5.1. Comprehensive description of systematic observations and research on climate change. 5.2. Strategy for a sustainable national communication process. 5.3. Increased public awareness and understanding of climate change | 5.1.1. Documentation on the status and need for research on systematic observations, and technical and financial limitations. 5.1.2. Documentation on the update of the financial resources and technical support received from national and international resources for activities related to climate change. 5.2.1. Report on the planned activities to establish a long term strategy for national communications preparation along with financial, institutional limitations, adaptation and mitigation measures to overcome the limitations. 5.3.1. Strengthened system | GEFTF | 666,818 | 1,470,000 |

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| | | | of information dissemination on climate change through workshops, seminars, training and publications. 5.3.2. Designed activities for enhancing participation of the relevant stakeholders in the preparation of the national communications. | | | |
| 6. Third National Communication report preparation | TA | Government of India-approved 3NC Report submitted to UNFCCC, and relevant technical document and policy briefs. | Published 3NC of India to UNFCCC ⁶ Technical reports, such as the GHG inventories, V&A adaptation assessments at the sectoral level, brief summaries of key policy issues relevant for decision making, and brief summaries of the key climate changes issues and findings at the district level | GEFTF | 403,720 | 1,780,000 |
| 7. Other new information required under the aegis of the Convention | TA | 7.1. Enhanced understanding of domestic mitigation actions, its need and the level/nature of support required, greenhouse gas emissions inventory and other related information | Submitted Biennial Update Reports, which will include the following: 1. Information on national circumstances and institutional arrangements relevant to the preparation of the national communications on a continuous basis 2. The national inventory of anthropogenic emissions by sources and removal of sinks of all greenhouse gases (GHGs) not controlled by the Montreal Protocol, including a national inventory report 3. Information on mitigation actions and their effects, including associated methodologies and assumptions 4. Constraints and gaps, and related financial, technical and capacity needs, including a description of support needed and received 5. Information on the level of support received to enable the preparation and | GEFTF | 2,500,000 | 7,500,000 |

⁶ This consists of: (a) National circumstances; (b) National GHG inventory; (c) Impacts and vulnerability assessment and adaptation measures; (d) Measures to mitigate climate change; and, (e) Other information relevant to achievement of the objectives of the convention.

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| | | | submission of biennial update reports 6. Other information relevant to the achievement of the objective of the Convention and suitable for inclusion in its biennial update report | | | |
| Sub-Total | | | | | 8,560,074 | 25,740,000 |
| Project Management Cost ⁷ | | | | GEFTF | 450,530 | 500,000 |
| Total Project Costs | | | | | 9,010,604 | 26,240,000 |

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

| Sources of Co-financing | Name of Co-financier | Type of Co-financing | Amount (\$) |
|---------------------------|--|----------------------|-------------------|
| National Government | Ministry of Environment and Forests, Government of India | Grant | 10,302,200 |
| National Government | Ministry of Environment and Forests, Government of India | In-kind | 15,787,800 |
| GEF Agency | UNDP | In-kind | 150,000 |
| Total Co-financing | | | 26,240,000 |

D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹ N.A.

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1 the GEF focal area/LDCF/SCCF strategies:

The objective of this proposed project is to prepare and submit India's Third National Communication (3NC) to the UNFCCC and other new information required to meet obligations under the UNFCCC, which is on the biennial update reporting. The project objective will be achieved with the fulfillment of the following outcomes, which are in line with the GEF's climate change mitigation strategic objective (SO-6) under GEF-5: Enabling Activities: Support enabling activities and capacity building under the Convention. The outcome is: Completed climate change enabling activities under the UNFCCC.

This proposed project will be carried out in accordance with the UNFCCC Guidelines for National Communications⁸. Moreover, This is a "must do" project that India has to do in order to fulfill its obligations to the UNFCCC (Article 12), based on the guidelines provided by the COP for non-Annex I countries (Decision 17/CP.8). Moreover, the project would also assess, during the preparation of full scale project document, the need for incorporating new decisions regarding reporting and other guidelines that might emerge in the future.

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities: NA

⁷The same as in Footnote 3.

⁸ Decision 17/CP. 8 - Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention. Decision on "Additional Guidance to the GEF" that has been adopted by the 14th Conference of the Parties to the UNFCCC requests the GEF "to ensure, as a top priority, that sufficient financial resources are provided to meet the agreed full costs incurred by developing country Parties in complying with their obligations under the Article 12, paragraph 1, of the Convention, noting and welcoming that a number of Parties not included in the Annex I (non-Annex I Parties) plan to initiate the preparation of their third or fourth national communications by the end of the fifth replenishment of the Global Environmental Facility (GEF 5)".

A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

The preparation of the 3NC and other new information required to meet the obligations under Convention is consistent with the commitment of Government of India to fulfill its obligations under the UNFCCC. India has been in the forefront of international efforts in developing a solid scientific understanding of climate change. The country has recognised the importance of climate change as evidenced by the adoption of the National Action Plan on Climate Change (NAPCC) in 2008. Many of its state governments are also committed to address the impacts of climate change and have initiated the process of preparing their respective State Action Plan on Climate Change (SAPCC) incorporating GHG inventory, mitigation, impacts, vulnerability and adaptation components. India has also announced post-Copenhagen a plan for reducing the energy intensity of GDP. The Government of India has already prepared and is in the process of finalising several missions to be incorporated in the NAPCC, e.g. National Solar Mission, National Energy Efficiency Mission and Greening India Mission. Activities leading to the preparation of 3NC, in particular the data, model outputs, mitigation-adaptation strategies, etc. would also contribute to strengthening the implementation of the NAPCC. Thus the proposed 3NC project from India is fully consistent with the national plans and priorities. Also, the proposed project is consistent with the aims and objectives as well as the provisions of the UNFCCC.

As an improvement to the previous NC formulations (i.e., 1NC and 2NC), the scope of the 3NC will be expanded to cover the districts in each state. Thus the data and information gathering will be carried out down to the district level. The expansion of the coverage will help in shaping up and strengthening the sub-national i.e. state level action plans. This project will also facilitate in the preparation of the Biennial Update Report 2014.

B. PROJECT OVERVIEW:

B.1. Describe the baseline project and the problem that it seeks to address:

The preparation and submission of National Communications (NCs) is an obligation and contribution of India to the UNFCCC. As with the other Parties to the Convention, India has actively undertaken, and will continue to do, the task of sharing information on its implementation efforts as well as on the constraints, problems and gaps the country faces in implementing the Convention. For India, the NCs will not only continue to be the main reporting instrument of the UNFCCC but will also be an important strategic tool to help align its interests and priorities to the overall goals of the UNFCCC.

India has successfully prepared its First and the Second National Communications, and through this proposed full size project intends to prepare its 3NC as well as strengthen institutional and analytical capacities at decentralized level with the financial assistance from the GEF. Since the preparation of its first NC (1NC), the process of development of national communications has triggered large scale networking, capacity building and involvement of research organizations and various government departments. The preparation of the 2 previous NCs has led to the development of expert teams for preparation of GHG inventories as well as assessment of impacts, vulnerability, and adaptation. India is a large country with diverse climatic, socioeconomic systems and natural ecosystems. In India, there is a large dependence of population on climate sensitive resources such as water resources, food production, forests and fisheries. Despite the activities implemented during the preparation of the 2 previous NCs, there are still many limitations with respect to estimation of GHG inventories, projection of climate change at regional level, development and adoption of appropriate climate impact models and development of vulnerability profiles, at the district level. This is due to the large diversity of industries, settlements, natural and socioeconomic systems. Given the size of the country and diversity of complex socio-economic and natural systems, there is still a need for involving more local institutions, building technical and infrastructural capacities and stakeholder participation in climate change related activities

relevant to NC preparation.

India has announced its NAPCC in 2008, which also includes 8 national missions namely: Green India Mission; Enhanced Energy Efficiency; Solar Mission; Sustainable Habitat; Sustaining the Himalayan Ecosystems; Sustainable Agriculture; Water Mission; and, Strategic Knowledge. SAPCCs are being prepared and completed actions plans are currently under implementation. The information and knowledge developed, capacity built and institutional network developed during the preparation of first and second national communications has assisted the preparation of climate action plans and missions. The institutions and networks established during the preparation of the 1NC have been further strengthened during the preparation of the 2NC.

However, there are still many scientific, technical and institutional limitations in the: (i) adoption of tier-III methods and making reliable GHG inventory at disaggregated district/regional level to be aggregated at the national level; (ii) development of region-specific emission factors for different sectors; (iii) adoption of multiple Global Climate Models (GCMs) and Regional Climate Models (RCMs) for impact assessment and downscaling of climate change projections for district, and cropping systems scales; (iv) adoption of impact assessment models at disaggregated levels such as districts, different cropping systems, watershed levels, different forest types and species level assessment; (v) carrying out impact assessment for short term periods such as up to 2030; (vi) data limitations for inventory and impact assessment models; (vii) absence of models to suit Indian forest types, cropping systems and mountainous regions; (viii) absence of information, data, maps for preparation of vulnerability profiles to enable mainstreaming of adaptation in developmental programmes; (ix) estimation of climate risk related damages and costs; (x) climate impact assessment on infrastructure; and, (xi) involvement of stakeholders at decentralized levels, creation of education, awareness and building capacities to enable adaptation decision making at decentralized levels.

The salient features of the proposed Third National Communications (3NC) when compared with the previous NCs are: (i) improvement in the National GHG inventory estimates and reduced uncertainty by shifting to tier III methodologies, while adopting the relevant scientific elements of IPCC GHG Inventory Guidelines of 2006 (ii) reliable climate projections at regional level using multiple climate models (iii) reliable assessment of climate change impacts using multiple GCM scenarios and multiple impact assessment models at district/regional level; different cropping systems, forest types, watersheds, coastal settlements, etc. (iv) spatial vulnerability indices and profiles for different sectors and regions and at decentralized levels such as at district level for different sectors, (v) development of adaptation framework, practices to enable mainstreaming of adaptation into developmental programmes, estimate the costs and benefits of adaptation and mitigation programmes (vi) development of sustained institutional and technical capacities for continued preparation of National Communications, and other new information required under the aegis of the Convention.

The process and results of the 3NC preparation as well as strengthen institutional and analytical capacities at decentralized level would enable India to prepare improved climate change adaptation and mitigation strategies, enhanced technology transfer for adaptation and mitigation, sustained institutional capacity for developing future national communications. All these activities would enable India to meet the obligations under the UNFCCC as well as addressing global climate change concerns in particular mitigation, adaptation and technology transfer. This will ultimately enable India to shift to a low carbon and sustainable development path keeping in mind the primary goals of economic development and conservation of environment and natural resources. The proposed project involves the following major components:

Component I: India's National Circumstances

This component would involve the updating of the information on the prevailing conditions and situations at the national and state levels regarding development priorities and objectives that serve as the basis for

addressing issues relating to climate change. Such information provided on national circumstances is critical for understanding India's vulnerability, its capacity and options for adapting to the adverse effects of climate change, as well as options for addressing its GHG emissions within the broader context of sustainable development. Among the information that would be provided under this component are the following:

- Demographic and socioeconomic features, such as occupation patterns, rural-urban population
- Land use pattern and systems, area under different cropping systems, forest types and soil types, etc.
- River basins and valley systems and irrigation systems
- Climatic systems, monsoon, rainfall and temperature trends and variability and dependency on monsoons
- Status of natural resources
- Climate sensitive sectors and vulnerable populations and regions
- Report on India's developmental policies and programmes at national and state level
- Report covering the existing institutional arrangements relevant to the preparation of the GHG inventory on a periodic basis.

These sets of information need to be generated to take stock of progress on actions towards addressing issues relating to climate change. The information gathering work is also for understanding the current institutional arrangements for periodic conduct of GHG inventory as there are still many scientific, technical and institutional limitations when looked at sub-national level. There are still limitations that have to be addressed such as lack of reliable GHG inventory at disaggregated district/regional level, downscaling of climate change projections for district level, lack of impact assessment models at district level and lack of existing institutional arrangements relevant to the preparation of the GHG inventory on a periodic basis. In order to do effectively address these, the abovementioned set of information are very necessary. In this regard, this is indeed an important activity to guide the process of preparing the Third National Communication especially in reporting on the developmental policies and programmes at the national and state levels; and supporting the existing institutional arrangements relevant to the preparation of the GHG inventory.

This component will not be limited to a simple update of the national circumstances from the Second National Communications, as the national climate change agenda has evolved rather significantly in the past few years. Among this is India's launch of the NAPCC, which consists of eight National Missions. Numerous other initiatives and measures are also planned to be implemented during the period overlapping with the implementation of the 3NC. These initiatives include those to be carried out by states that have committed to address the impacts of climate change. In line with this, many state governments are in the process of preparing their respective SAPCC incorporating GHG inventory, climate change mitigation actions, adaptation to climate change based on vulnerability and adaptation analyses, and other components as mentioned earlier. Therefore, NAPCC would require updated assessment of national circumstances, particularly activities related to mainstreaming of climate change into national development plans, and in particular state development plans with recognition to issues that have local relevance and peculiarities. The vast scale of scientific assessments (in line with the NAPCC and SAPCC) that have to be done warrants the allocation of necessary financial resources, especially when considering the varied circumstances at the regional level. The allocation of appropriate financial resources will ensure the alignment of mainstreaming efforts at regional level in the context of national climate change strategies.

Component II: National GHG Inventory:

The GHG emission inventories would be made available for the latest year possible, i.e. 2010 by adopting the latest IPCC guidelines as well as good practice guidance and by reducing the uncertainty associated with GHG inventory. The inventory would cover the following sectors:

- Energy Sector.
- Industrial Processes Sector.
- Agricultural Sector.
- Land-Use Change and Forestry Sector.
- Waste Sector.

The GHG inventory process would involve the following activities and procedures:

National Activity Data and Emissions Factors database: It is necessary to have National Inventory Management System (NIMS) with the involvement of institutions with varied research experience to widen the pool of institutions that will look at the various aspects of inventory development. Also a national emission factor database would be developed/revised/updated for key sources and country specific emission factors as per different IPCC inventory categories that belong to different sectors, regions based on field studies; laboratory measurements; and, surveys of industries, municipalities, households, farms etc. The database would be validated along with uncertainty associated with the emission factors.

Tier III methods and models: Currently, only four of the seventeen key categories use Tier III methods for emissions estimate. Based on the experience and capacity built during the previous NC preparations, Tier III methods and models will be adopted for the formulation of the 3NC. This would involve development, validation and application of models for different sectors and regions. Graduation to Tier III would potentially lead to reduction of uncertainties and complete estimation of inventory for all the relevant IPCC inventory categories for India. Therefore, activities shall focus on identifying appropriate climate models, data needs and sources for undertaking impact studies.

Adoption of IPCC 2006 GHG Inventory Guidelines: The latest IPCC guidelines and good practice guidance recommended by the UNFCCC would be adopted. Moreover, the scientific and methodological improvements suggested in the IPCC GHG Inventory Guidelines-2006 would also be incorporated.

Development of National GHG inventory system: It is necessary to build on the base of existing knowledge institutions engaged in the preparation of earlier national communications for the preparation and operation of NIMS. Hence, it is required to formulate an approach to bridge the gap in activity data identified in inventory preparation of SNC.

The NIMS was developed under the SNC, where it has addressed the following:

- (a) Institutional arrangements (i.e., Indian Network for Climate Change Assessment (INCCA)) that worked mainly on vulnerability assessment & adaptation and GHG emission inventory of 2007
- (b) Establishment of database management including methodological issues to an extent
- (c) Procedure for archiving and continuous update of the database
- (d) Uncertainty management issues of the inventory

During the SNC preparation, the arrangements related to the formulation of a separate steering group to oversee the operations of NIMS and provision of technical guidance were not finalized. In addition, identifying elements and issues and preparing subsequent inventories thereafter requires continuous updating of inventories at regular intervals and as per requirements.

The NIMS may address the requirements of documentation, archiving and continuous updating of the database and uncertainty management issues of the GHG inventories being developed across the years. Under the 3NC, the following strategies are proposed:

- (a) Ensure NIMS will cover the latest information, region wise, based on field studies
- (b) Use of Tier-III methodologies for most of the sectors as SNC could be able to address this to only limited sectors. Thus, the accuracy of GHG inventory under 3NC is expected to increase.

- (c) Further strengthening and streamlining of the institutional structure to sustain and take care of long term reporting requirements of national GHG inventory and the estimation of GHG emissions
- (d) Establishment of a separate steering group to oversee the operations of the NIMS and provide technical guidance
- (e) Sustenance of the system identified in SNC to ensure appropriate adaptability and response
- (f) Ensure updating of methodologies and related information are absorbed in the system in a sustained manner

In the other words, the 3NC will focus on continuous implementation and improvement of the NIMS elements developed under SNC. The gap in activity data identified in inventory preparation during the SNC will also be filled. In order to embed these elements, it needs additional financial resources especially for the studies to be conducted at regional level, use of tier-III methodologies, etc.

Therefore, it is necessary to identify researchers and groups that will be involved in the assessments and complete institutional arrangements for reporting, documentation, archiving mechanisms for undertaking GHG emission estimates. A national inventory system for different sectors will be further updated and improved by identifying lead institutions, initially with the support of INCCA, to be supported by a network of institutions for making periodic GHG inventory on a continuous basis. The technical and institutional capacity would be enhanced with additional financial support for the inventory process.

Quality Assurance and Quality Control (QA/QC): Development of NIMS may also contribute for the establishment and implementation of sustained QA/QC procedures as recommended by the IPCC guidelines and good practice guidance.

Uncertainty reduction and estimation: The GHG inventory in some of the sectors such as LULUCF and agriculture is characterized by high uncertainty. Uncertainty was assessed using Tier II IPCC methods during the 2NC preparation. This uncertainty would be reduced through the adoption of QA/QC procedures and shift to Tier III methods during the 3NC preparation.

Component III: Impacts and vulnerability assessment and adaptation measures

This component would involve improved assessment of climate change impacts and vulnerability of different sectors and regions at decentralized level as well as development of adaptation strategies and practices. Multiple climate model projections and multiple impact assessment models would be adopted for realistic assessment of climate change impacts. Vulnerability profiles would be developed at district level to enable mainstreaming adaptation into developmental programmes and projects. Climate impacts and vulnerability will also be assessed particularly focused on the short term (2030) along with medium (2050) and long term (2075).

Development of climate projections using multiple GCMs and RCMs: During the 2 previous NC preparations only one GCM and RCM model was used. Given the variations in the projections for the future climate, for the 3NC multiple GCMs will be adopted to make reliable projections along with uncertainty estimates. Climate projections would be made by down-scaling the GCM outputs to finer grid scales such as $20 \times 25 \text{ km}^2$. Climate variability and climate projections would be determined at district level for different parameters such as temperature, rainfall, floods and droughts.

Impact assessment for all the sectors using multiple models: It is necessary to identify researchers and groups that will be involved in the development of climate change scenarios for India. Also, it is required to identify climate models (Multiple models) that can be used to simulate the highly variable climate in India. The impact assessment would cover all the sectors wherever possible using multiple models along the following lines:

Sectors: Agriculture (different cropping systems), forest ecosystems, river basins and watersheds, coastal zones, fish production and health

Scale: Climate impacts would be assessed at finer scales to enable adaptation policy formulation. The scale to be used is determined by the GCM and the downscaled RCM.

Period for assessment: To enable short term adaptation policy development, the focus of impact assessment would be for short term period, along with impact assessments for medium and long term.

Models: The most advanced impact assessment models available would be adopted for impact assessment and wherever possible multiple models would be used to obtain a range of impact assessments.

Crop production: INFOCROP and Cropsyst

Water resources: SWAT

Forest ecosystems: LPJ, IBIS and CLM

Vulnerability profiles: Climate change risk and vulnerability assessment tool and framework will be developed. It is very necessary to identify and prioritize vulnerable sectors at the national level, as well as develop vulnerability indicators and profile for these sectors, regions and population. This would require the conduct of activities such as identification of scientist/groups that will develop the socioeconomic scenarios relevant to Indian circumstances especially for vulnerability assessment. It is necessary that the scenarios must be developed at national level as well as sub-national level e.g. at agro-ecological zones. Vulnerability profiles would be developed based on vulnerability indices for different sectors, sub sectors at district, cropping system and watershed level. Spatial vulnerability profiles on a GIS format would be developed at district level along with ranking of the most vulnerable natural ecosystems, food production systems and water resources at district level. Vulnerability indices would be developed for a set of indicators identified for each sector. These indicators would be quantified, normalized and aggregated to obtain composite vulnerability indices for different sectors. Vulnerability profiles would be developed according to:

- Different sectors and sub sectors
- At cropping system, forest type, watershed and district level
- For short, medium and long term periods.

Adaptive capacity: The adaptive capacity of the natural and socioeconomic systems, the institutions (such as departments of agriculture, forests and irrigation) and local communities (farmers, coastal fishermen and forest dwellers) would be assessed.

Adaptation framework and decision tool: It is necessary to identify priority adaptation strategies. An adaptation framework would be developed incorporating the impact assessment, vulnerability profile development, adaptation capacity assessment and participation of different stakeholders. Studies would be conducted to assess the traditional adaptation practices and coping strategies. In addition to traditional adaptation strategies, modern scientific methods and practices for enhancing adaptation would be developed for different sectors and regions and methodologies for merging the traditional and modern technologies would also be explored.

Component IV: Measures to mitigate climate change

Under this component, work on the NAPCC as well as on several national missions aimed at mitigation of climate change and their implications for mitigation would be presented. It is necessary to identify and evaluate existing policies/measures/programmes/projects both at the national and state levels that are focusing of climate change mitigation and adaptation. In addition to national missions, state level action plans for climate change aimed at mitigation of climate change would be assessed and incorporated in the report. Also required to identify institutions and models that can be used to develop projection scenarios of GHG emissions. The 3NC will also develop improved future GHG emission scenarios for India using more up-to-date information. Based on the models such as LEAP, MARKAL and other mitigation assessment models, the availability of those technologies in the country, national R&D programmes, technology transfer needs, mitigation potential, costs and benefits along with limitations would be assessed. Mitigation potential will be assessed for energy as well as land use sectors.

Component V: Other information relevant for the preparation of the 3NC

This component of the project explicitly deals with national issues concerning capacity needs (more at the aggregate level) with specific reference to regional diversity and would involve the following:

- Assessment of key mitigation and adaptation technology needs, availability of those technologies in the country, national R&D programmes and technology transfer needs, including financial and technological limitations.
- Analysis of the capacity building needs (including education and training), activities for research, implementation and monitoring of climate change mitigation-adaptation activities and NC preparation.
- Assessment of the status and needs for research and systematic observations and limitations.
- Evaluation of financial resources and technical support received from national and international sources for activities related to climate change including new initiatives of all the line ministries vis-à-vis their climate change concerns.
- Formulated a framework in accessing updated information/data from different institutions, establishment of a long term strategy for NC preparation, along with financial, institutional limitations and mitigation measures to overcome the limitations.
- Organization and conduct of workshops, seminars and training programmes to disseminate information on climate change in different parts of India.
- Activities aimed at enhancing the participation of the relevant stakeholders at national and state level would be considered. Stakeholders include government departments, industry, elected representatives, research organizations and NGOs.

One of the major focus areas for the 3NC report pertains to activities planned at decentralised level (state, district). Such activities would require significant resources for assessing local capacities and developing further the existing levels in line with the requirements for formulating National Communications and in implementing measures and actions developed and stated in NC reports. This would also entail the operationalization of a more robust, systematic and continuous information dissemination system (through establishment of zonal and regional networks, organising of dissemination events) and updating the same on a regular basis. This would require identification of key stakeholders, defining a sustainable role for all and ensuring a sustainable system that will be complementary to achieving the objectives of the Convention.

Component VI: Third National Communication report preparation and related studies

A draft national communication report would be prepared and presented at workshops to seek the opinion of different stakeholders particularly research organizations. Apart from the required components of NCs (National circumstances, GHG inventory, vulnerability and adaptation etc.), the descriptions of the NC process/methodology followed, activities and participation of different organizations would be included in the 3NC report. After the expert consultations, the 3NC report would be finalized and submitted for GOI approval, and the approved document would be finally submitted to UNFCCC. A number of technical reports, such as the GHG inventories, V&A adaptation assessments at the sectoral level, key policy issues relevant for decision making, brief and summaries of the key climate changes issues and findings at the district level in collaboration with the local institutions/government involved.

The distribution of publications does not only pertain to the finished product i.e. the 3NC report but also the numerous and in-depth publications focusing on vulnerability & adaptation and inventory assessments. During the 3NC project, a major focus would be at decentralized levels and the major research and capacity development activities that will be carried out are expected to produce reports that contain in-depth analysis of information at decentralized level. The information that will be generated will have to be communicated in regional or local language in most cases. Therefore, financial resources are needed for the translation of such reports in local language in addition to the main report of 3NC.

The guidelines regarding MRV and other mechanisms are still evolving and therefore the assessment of the nature of their incorporation for reporting purpose would be discussed as the guidelines and other related matters evolve.

Component VII: Other new information required under the aegis of the Convention

In line with the decision set forth during COP 17 in Durban, non-Annex 1 countries like India shall submit a biennial update report every two years, either as a summary of parts of their national communication in the year when national communication is submitted or as a stand-alone update report, containing updates of national greenhouse gas inventories, including a national inventory report and information on mitigation actions, needs and support received. To comply with this new obligation, such report will be prepared taking into account their development priorities, objectives, capacities and national circumstances. Data gathering and analysis work, as well as consultations with relevant institutions that were involved in the national communications preparation, will be carried out in order to deliver and consolidate the following items into India's Biennial Update Report:

- Information on national circumstances and institutional arrangements relevant to the preparation of the national communications on a continuous basis;
- National inventory of anthropogenic emissions by sources and removal by sinks of all GHGs not controlled by the Montreal Protocol;
- Information on mitigation actions and their effects, including associated methodologies and assumptions;
- Constraints and gaps, and related financial, technical and capacity needs, including a description of support needed and received;
- Information on the level of support received to enable the preparation and submission of biennial update reports;
- Information on domestic measurement reporting and verification; and,
- Information that India considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its biennial update report.

The discussions (through expert group consultations, workshops and seminars) necessary to come up with the stocktaking, analytical and updating work to be done in the preparation of the biennial update report shall cover the major components of the national communications, as well as the level and nature of support received by the country in implementing the planned mitigation and adaptation actions, as well as the estimated level of support required..

In order to compliment this, there is already an established system of INCCA which is operational and mandated with the following tasks:

- (a) Assess the drivers and implications of climate change through scientific research
- (b) Prepare climate change assessments once every two years
- (c) Develop decision support systems
- (d) Building capacity towards management of climate change related risks and opportunities

INCCA is being visualized as a mechanism to create new institutions as per the requirements and engage existing knowledge institutions to work with various ministries and other agencies. The mandate of INCCA would continue to evolve to include the new scientific questions that confront humanity including the population living within the Indian region. INCCA would harness involvement of Indian as well as Indian expertise abroad when required. To prepare the NATCOMs, the expertise of a number of institutions has been pooled in across the country and a network has been created that can generate information on a regular basis. However, the framework conditions of INCCA are not yet institutionalized when it comes to the new information required under the aegis of Convention. Also, it is necessary to develop a web based database management system to widen accessibility of data to concerned stakeholders and also towards visualization of GHG data thus generated.

The guidelines regarding MRV and other mechanisms are still evolving and therefore the assessment of the nature of their incorporation for reporting purpose would be discussed as the guidelines and other related matters evolve.

B. 2. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project: N.A.

B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read Mainstreaming Gender at the GEF.":

The 3NC will address gender concerns by recommending the building of adaptation capacities of women to cope with the adverse impacts of climate change and reduce negative effects on household welfare and environmental sustainability. In this regard, the 3NC project would work towards gender mainstreaming that identifies gaps in addressing equality through the use of sex-disaggregated data, systematically analyze and address the specific needs of both women and men; identify targeted interventions to enable women and men to participate in – and benefit equally from – development efforts. Therefore, for attaining gender equality towards access to energy security and natural resource management in the context of adaptation towards climate change, the 3NC process would develop strategies and policies to close the gaps. Also, the process will identify resources and expertise for implementing such strategies, develop steps that would monitor the results of implementation, and identify institutions that can be made accountable for outcomes to promote gender equality.

B.4. Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

Based on the experiences from the preparation of the 2 previous NCs, no major risks are anticipated. Further, the Government of India is fully committed to addressing climate change concerns at the national and global levels as evidenced by the NAPCC and its missions. Some of the potential minor risks could be as follows:

(a) Access to multiple climate change models: In the 3NC preparation, multiple downscaled GCMs at finer grid scales would be adopted to assess the impacts at micro levels. There could be delays in accessing the models and modeled outputs. This risk could be mitigated by forming expert teams involving multiple institutions in India to develop downscaling methods using GCM outputs available at the IPCC data centre.

(b) Lack of technical capacity: This risk is minimal since there are a large number of institutions in India which are capable of conducting field studies and modeling required for the 3NC preparation. India has also set up a National Climate Change Research Centre as well as several scientific centres to promote research on climate change. The Government of India has also initiated the process of INCCA, which would complement and augment the 3NC process, as well as other new information required under the aegis of the Convention as it emerges.

(c) Coordination with stakeholders at National and State levels: India is a large country with 28 states and thus coordination could be a challenge. However, with the preparation of the state climate change action plans and establishment of state level climate change coordinating committees, the coordination may not be a difficult task. Finally, the Prime Minister’s Climate Change Advisory Council would enable overcoming any coordination barriers.

(d) Non-finalization of new reporting guidelines: There is a potential risk that clarity and actual guidelines for the additional reporting requirements (not available at the moment) may not be agreed in the upcoming COPs. Therefore, in the light of this development, there is a need to undertake a mid-term review for assessing the nature of the new guidelines and its incorporation thereof.

(e) Non-availability of finance: The nature and quantum of tasks is contingent upon the timely and adequate availability of finance. These attributes of financial arrangement would be a significant barrier in achieving the desired outcomes/objectives of the various elements.

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

The stakeholders of the project are the scientific community from research institutions such as universities, the institutions of the ministry of earth sciences, science and technology institutes such as the Council of Scientific and Industrial Research, Indian Council for Agricultural Research of the Ministry of Agriculture, Indian Institutes of Management and Technology. In addition, the line ministries and government departments relevant for climate change mitigation and adaptation at the state, district levels and local level decision making bodies (Panchayati raj institutions) will be involved in the process. Participation will also be sought from other stakeholders including civil society groups, community based organizations and other policymakers as appropriate.

| Stakeholder | Role |
|---|---|
| Ministry of Environment and Forests (MoEF) | Executing/Implementing partner responsible for managing and operating day-to-day project implementation and managing inputs related to LULUCF |
| <ul style="list-style-type: none"> • Ministry of Power (MoP) • Ministry of New and Renewable Energy (MNRE) • Central Institute of Mining and Fuel Research • Tata Energy Research Institute • Central Road Research Institute • Jadavpur University • Indian Institute of Petroleum • Winrock International India | Responsible for inventory of energy sector and come up with climate change mitigation action plans |
| Ministry of Agriculture | Responsible for agricultural research and livestock |
| IITM – Indian institute of Tropical | National public institute, as part of INCCA |

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|--|---|
| Meteorology | and responsible for developing climate change scenarios |
| CARI – Central Agricultural Research Institute | National public institute, as part of INCCA and responsible for water and agricultural related aspects |
| CMFRI – Central Marine Fisheries Institute | National public institute, as part of INCCA and responsible for fisheries |
| CGWB – Central Ground Water Board | National public institute, as part of INCCA and responsible for water resources |
| GBPIHED – G.B. Pant Institute of Himalayan Environment and Development | Research institute, as part of INCCA and responsible for agricultural, LULUCF, water, natural ecosystems and biodiversity |
| JNU – Jawaharlal Nehru University | National public institute, as part of INCCA and responsible for water resources |
| IARI – Indian Agricultural Research Institute | National public institute, as part of INCCA and responsible for inputs on agricultural research and livestock |
| IIPH – Indian Institute of Public Health | National public institute, as part of INCCA and responsible for health aspects |
| IISc – Indian Institute of Science | National public institute, as part of INCCA and responsible for inputs on LULUCF, natural ecosystems and biodiversity |
| INRM – Integrated Natural Resource Management | National public institute, as part of INCCA and responsible for natural ecosystems and water resources |
| IITD – Indian Institute of Technology Delhi | National public institute, as part of INCCA and responsible for water resources |
| IWMI – International Water Management Institute | Public institute, as part of INCCA and responsible for water resources |
| IITR – Indian Institute of Technology Roorkee | National public institute, as part of INCCA and responsible for water resources |
| JU – Jadavpur University | Research institute, as part of INCCA and responsible for water resources |
| NIMR – National Institute of Malaria Research | National public institute, as part of INCCA and responsible for health aspects |
| NIO – National Institute of Oceanography | National public institute, as part of INCCA and responsible research pertain to water resources and sea-level rise |
| NRAA – National Rainfed Area Authority | National public institute, as part of INCCA and responsible for water and agricultural related aspects |
| YSPU – Dr. Y S Parmar University | Research institute, as part of INCCA and responsible for water and agricultural related aspects |
| National Dairy Research Institute | National public institute, responsible for inputs on agricultural research and livestock |
| Indian Veterinary Research Institute | National public institute, responsible for inputs on agricultural research and livestock |
| Central Leather Research Institute | National public institute, responsible for inputs on agricultural research and livestock |
| Indian Grassland and Fodder Research Institute | National public institute, responsible for inputs on agricultural research and livestock |

| | |
|---|---|
| Zoological Survey of India | Research institute, responsible for inputs on LULUCF |
| National Remote Sensing Centre & Indian Institute of Remote Sensing | National public institute, responsible for inputs on LULUCF |
| Forest Survey of India | National public institute, responsible for inputs on LULUCF |
| Indian Council for Forestry Research Institute | National public institute, responsible for inputs on LULUCF |
| National Environmental Engineering Research Institute | National public institute, responsible for inputs on industrial process and product use and waste management |
| National Physical Laboratory | National public institute, responsible for inputs on waste management |
| Confederation of Indian Industries | Institute, responsible for inputs on industrial process and product use |
| Cement Manufacturer's Association | Responsible for inputs on industrial process and product use |
| Sub-national/State Nodal Agency on Climate Change | Responsible for coordinating activities such as SAPCCs within the geographical boundaries and with National coordinating agencies |

The impacts of climate change are expected to be on natural systems that will in turn affect the human population. Therefore, the results presented through the 3NC will be of immediate use to the policymakers for developing and implementing adaptation strategies for coping with the adverse impacts on, say, agriculture, forests and forest products, other natural ecosystems including water resources, human health and on accessibility to energy through renewable and new energy sources. Further, NGOs and the private sector to an extent can be involved in the delivery of the technologies and techniques of adaptation. Also the mitigation strategies to be implemented to reduce the intensities will be directly implemented by the public sector and the private sectors.

B.6. Outline the coordination with other related initiatives:

The process of 3NC preparation and other new information to meet the obligations under Convention will be fully linked to many of the ongoing efforts in India aimed at promoting mitigation and adaptation strategies, and consistent with the NAPCC. The 3NC will be prepared by involving all the relevant ministries and a large network of national institutions spread across India. All the research institutions involved in the 3NC preparation are also involved in the various activities of INCCA which was launched by Government of India. The involvement of the stakeholders in particular the various ministries relevant to climate change will be ensured with the formation of a National Steering Committee chaired by the Secretary, Ministry of Environment and Forests. There will be complementarity between the 3NC process as well as the preparation and implementation of the national missions under the NAPCC as well as the state level efforts of preparation and implementation of climate change mitigation and adaptation programme (such as SAPCCs).

C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:

UNDP is present in 166 countries where it implements programmes in the areas of climate change mitigation, biodiversity conservation, land degradation, international waters and chemical management. In India, UNDP supports a large portfolio of climate change programmes. The 2 previous NCs of India were prepared with the support of UNDP-GEF in partnership with the Ministry of Environment and Forests, Government of India. UNDP India has been working collaboratively with many ministries of the

Government of India (e.g. National Bureau of Energy Efficiency, Ministry of New and Renewable Energy), research organization and civil society organizations in implementing a number of projects as well as several state governments. UNDP also supports the Government of India in strengthening the capacity of ten state governments in preparation of their SAPCC. Synergies between the SAPCC and the 3NC will contribute to improved capacities and better coordination among different stakeholders at the national and state levels.

C.1. Indicate the co-financing amount the GEF agency is bringing to the project:

UNDP will provide US\$ 150,000 as co-financing in-kind towards the personnel cost in monitoring and supervising the project.

C.2. How does the project fit into the GEF agency's programme (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

The project is aligned with the current Country Programme Action Plan (2008-2012) which supports the Government of India in meeting its commitments under the different multilateral environmental agreements. This support will also continue in the following CPAP (2013-2017), which is currently being designed. UNDP India indicated in its midterm evaluation report of its approach in moving towards a low carbon climate resilient development pathway.


The Energy and Environment Unit of the UNDP CO has seven programme officers that support implementation of projects related to the different GEF focal areas, including biodiversity, climate change, land degradation and chemical management. Backed up also with technical expertise available in the UNDP Asia-Pacific Resource Centre (APRC) based in Bangkok, Thailand, the India country office has sufficient staff complement that can effectively supervise the implementation of this project. A professional staff from the Country Office (EEU) will be responsible for oversight and project assurance and will represent UNDP in the NSC. Expertise of other professional staff in EEU in climate change, renewable energy, natural resources management and land degradation issues shall also be utilized, when necessary, to support implementation of the project.

PART III: 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 Operational Focal Point endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

| NAME | POSITION | MINISTRY | DATE (MM/dd/yyyy) |
|-----------|-----------------------------|--|-------------------|
| Hem Pande | GEF Operational Focal Point | MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA | JANUARY 25, 2012 |

B. GEF AGENCY(IES) CERTIFICATION

| This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation. | | | | | |
|---|--|-------------------|--|---------------|------------------------|
| Agency Coordinator, Agency name | Signature | DATE (MM/dd/yyyy) | Project Contact Person | Telephone | Email Address |
| Yannick Glemarec UNDP/GEF Executive Coordinator |  | January 25, 2012 | Martin Krause, UNDP APRC, Bangkok | +66-2288-2722 | martin.krause@undp.org |