Annex 1: Optional Guideline and Questionnaire

To Assist with Preparation of an FCPF Readiness Plan Information Note (R-PIN) 3/8/08

The guidelines and questions below are designed to assist a country in preparing its R-PIN submission to the Forest Carbon Partnership Facility (FCPF):

1. Following this guideline and answering these questions is optional. We hope this Annex may assist some countries in organizing their information for filling out some questions in the R-PIN, or elaborate further on some information
2. The data-related questions are intended to establish what data are currently available for use in land use/land cover change and biomass/carbon emissions analyses.
3. Analysis-related questions are focused on determining the in-country capacity for analysis that would be required to monitor carbon emissions and identify pertinent REDD polices.
4. Institutional questions are geared toward determining the current capacity of the country's governmental system to successfully implement a carbon emissions reduction strategy.
5. Only selected template questions are included below.

Template question 2. Which institutions are responsible in your country for:

a) forest monitoring and forest inventories:

(1) Which government institutions, NGOs, or other organizations will be responsible for monitoring and verifying land use/land cover change? How do you plan to manage collaborations between/among these institutions?

(This question is intended to establish the benchmark for current capacity, and help you design a work plan for improvement. Please describe the capacity of major governmental and non-governmental institutions involved.)

The National Institute of Statistics, Geography and Informatics (INEGI), is responsible for land use and land cover mapping. They deliver 1:250,000 scale maps of the whole country every 5 years. At the end of 2008 the vegetation coverage will be available with the land cover of 2007; and at the end of 2009 the land-use coverage (agriculture and animal husbandry) will be also available. However, the scale of the maps will not be sufficient to detect and monitor deforestation and forest degradation for REDD purposes, which means that a new system needs to be set up, with a timely resolution of one year and a spatial resolution of 1-2 ha at least. The system could rely on the imagery that is now available to the government.

The National Forest Commission (CONAFOR) is responsible for the National Forest Inventory. It has set up a permanent plot system of 25,000 geo-referenced conglomerates; each conglomerate comprises a set of 4 sites with a total area of 1,600 m^2. 20% of the conglomerates will be re-sampled every year, so a complete set of re-sampled conglomerates will be available every 5 years; re-sampling of conglomerates is starting in 2008. Additionally, a more detailed monitoring system is required for those areas where REDD activities will be carried out and where biomass densities have a high variation.

A network of research institutes has been established to assist the governmental institutions with the forest monitoring and forest inventories section. Close collaboration between the governmental institutes (INEGI, CONAFOR) and the research institutes is envisioned.

Template question 3. Current country situation (e.g., Where do forest deforestation and forest degradation occur in your country, etc.):

ANALYTICAL CAPACITY

(1) Briefly summarize the most important studies, data bases or other information related to deforestation and/or land use/land cover change in your country.

(This will provide an overview of what information is available today for policy makers. Provide background and details of the research available, and briefly review the relevant literature under the headings of: biophysical; social; economic).

Various studies have been carried out in Mexico related to deforestation and LU/LC, both on a national scale and at regional or local scales. At the country level, three greenhouse gas inventories have been carried out in the LULUCF sector, each with an increasing detail of information. The last inventory was carried out at TIER 2 level (IPCC-GPG 2003). Regional studies and local studies have used either the national databases or locally collected data on land use and biomass densities. Comparing national level studies with local level studies reveal a discrepancy of up to 2 times the biomass densities in similar land-use classes (local studies > 2* times national studies). Studies on social and economic drivers of deforestation are in general either regional (various municipalities) or local.

Biophysical: biophysical studies include the three national inventories on GHG emissions, regional GHG emission estimations for certain regions, such as Campeche (around Calakmul Reserve), Chiapas (Selva Lacandona), Michoacán (Purépecha region), Los Tuxtlas (Veracruz), and Sierra Gorda (Querétaro).

Social: detailed studies are available from Calakmul area, eastern Tabasco, Sierra Gorda, Chiapas (in relation to the Scolel Té pilot project).

Economic: In 2002 a national level study was published on the economic causes of deforestation, including the influence of international markets (Céspedes, 2002). Cost-benefit analysis of various forestry and agroforestry options for GHG mitigation projects, including forest management, was carried out in Chiapas and eastern Tabasco (Jong et al). Cost analyses will include certain transaction costs, such as capacity building, development of project proposals, among others.

(2) Are there any studies or projects on forest governance issues (i.e., forest concession policies, decision-making processes, transparency of forest operations and management), or legal frameworks that might be pertinent to REDD?

Yes, Merino et al (1997) published a study on the perspectives of sustainable community forest management in Mexico. Klooster and Masera published various articles on community forest management and carbon mitigation and biodiversity conservation; all these include the social aspects of forest management. The impact of community forestry on various ecological aspects was studied in detail for a case study in Michoacán. Mexican community forestry as such has been an example for many tropical countries. In 2005, Barton edited a book on Community forests in Mexico: Managing for Sustainable Landscapes, including historical, political, economic, ecological, sociological perspectives, with case studies from Michoacán, Oaxaca, Durango, Quintana Roo, and Guerrero. They state that Mexico leads the world in community management of forests.

(3) Describe the known and perceived gaps in analytic work to date. What kind of information is still needed?

Mexico has set up a good National Forest Inventory system with about 25,000 permanent plots. Additional carbon pools need to be included in the data collection procedures, particularly soil carbon. A network of additional permanent sample plots are required for those areas where REDD activities will be developed.

Mexico has three LULC maps covering the whole country, but will need more data points in time (e.g. 1990, 2000, from freely available Landsat imagery; 2007 will be available at the end of 2008), in order to be able to define the most conservative reference baseline for deforestation and forest degradation. INE has developed a forest risk index that can be used to identify the threatened forest. More work has to be done on identifying the forests that are threatened with deforestation in the near future, in order to establish a REDD program focused particularly on these areas. More data will be needed to define the area vulnerable to forest degradation, for which indirect methods will be tested (such as distances to infrastructure, grazing intensity, fuel wood use, etc.).

(4) How much of this analysis was conducted by in-country experts, as opposed to international experts or organizations?

(The objective here is to identify the current level of independent in-country capacity for REDD analysis. REDD work in most countries is likely to combine national and international teams.)

All information that is available has been collected by in-country experts. Experts are available for satellite image interpretation, analysis of carbon stocks from forest inventories and GIS applications to develop forest risk indices.

CONAFOR has established a transparent system to develop forest assistance programs with ample participation of stakeholders at all levels.

Template question 8. Implementing REDD strategies:

b) Would performance-based payments though REDD be a major incentive for implementing a more coherent strategy to tackle deforestation? Please, explain why. (i.e., performance-based payments would occur *after* REDD activities reduce deforestation, and monitoring has occurred):

(1) Has the government already begun thinking about how to use future revenues from REDD and how it would redistribute income from carbon emissions reductions/avoidance? Or should this be elaborated during the Readiness Process?

(Outline major distribution channels for funds to be distributed by government agencies. Identify any voluntary markets within the country and the means by which these transactions are monitored.)

Yes, the REDD program will be incorporated within the existing forest program ProÁrbol, with additional rules of operation for REDD projects. This program will be set up such that communities or private forest owners that are located in eligible forest areas are invited to participate in the program. Once the community or private project is accepted by the evaluation commission, a contract will be established between CONAFOR and the forest owner. In this way a transparent system is guaranteed in which participation is voluntary. The amount paid for REDD activities needs to be attractive enough to compete with alternative land uses which communities might have planned for their forested areas and to pay for the activities that need to be developed to guarantee the success of the project.

The main channel for funding will be CONAFOR's ProÁrbol program; which has established a trust fund, where allocated funding is deposited until payments are disbursed to the forest owner. Additionally, within the framework of a national effort with national baselines for forest carbon accounting, voluntary programs can be set up, for which a registration office will be required (e.g., existing DOE of CDM projects). A guarantee fund will be set up to provide funding to voluntary projects at times when, due to unforeseen circumstances (e.g. forest fires, hurricane damage, etc.), reductions of emissions of GHG from avoided deforestation and degradation, with regard to the national baseline, are not accomplished

Template question 9. REDD strategy monitoring and implementation:

Physical Data Capacity:

(1) Does your country have a forest inventory?

(Forest inventories typically provide very accurate, on-the-ground estimates of timber volume, biomass, etc. Together with statistics on forest-area change, access to forest inventory data is critical to quantify carbon emissions resulting from land conversion.). If yes, consider providing the following detail:

Yes, CONAFOR is responsible for conducting the National Forest and Soils Inventory.

- **Is it a national or regional forest inventory? Or an inventory only for protected areas?**

(It is important to know how representative the inventory is of existing forest conditions).

The most recent National Forest and Soils Inventory was carried out between 2004 and 2007, in which about 25,000 permanent plots have been established systematically, with a varying distance between plots, according to predominant land cover type. A few remote areas were not sampled, due to difficulties of access. Some states have developed a state level inventory; although at present the corresponding data is not yet available.

- **When was it implemented?**

(If an inventory was conducted only once in the distant past it will not be representative of current conditions but may be useful for establishing historical baselines)

Between 2004 and 2007 National Forest and Soils Inventory was conducted. All plots will be re-sampled on a 5 year interval; each year 20% of the plots will be re-visited, starting in 2008.A previous national forest inventory carried out between 1992 and 1994, had some 16,000 sampled sites of 1,000 m^2.

- **What is the spatial intensity (i.e., plot density) and temporal frequency (i.e., time between inventories) of data collection?**

(The higher the spatial and temporal frequency, the greater the capacity to monitor forest change)

5 by 5 km (highland and evergreen forests), 10 by 10 km (dryland and deciduous forests) and 20 by 20 km (scrubland). As re-measurement of 20% of the plots will be conducted every year, it will ensure new information will be available to

assess changes in land cover/land use, as well as forest dynamics at some extent.Both the land cover and use maps drawn up by INEGI and the National Forest and Soils Inventory are to be drawn up every five years. The cartographic elements of these, share an almost identical list of land cover classes, and are thus highly comparable. Sampling for the National Forest and Soils Inventory is carried out on a grid matrix, with distances of 5 km between points for montane zones (highland and evergreen forests), 10 km for semi-arid and subhumid zones (desert, semi-desert grassland and deciduous forests) and at 20 km distances for arid zones (desert and scrub).

- **Are sample plots permanent, i.e., revisited and re-measured during subsequent inventories?**

(Permanent plots are more useful for monitoring forest carbon uptake/emissions)

all plots are permanent and re-sampling of 20% of them will be conducted every year (to complete a 100% coverage every five years). This will ensure that relatively up to date information will be available to assess changes in land cover/land use, as well as forest dynamics.

- **Which vegetation attributes (stem diameter, canopy cover, etc.) are measured?**

(This information is essential to understanding what the inventory can be used for, e.g., monitoring, modeling, etc.).

  - Trees with dbh > 10 cm, total and bole height, canopy cover, and species.
  - All other elements are recorded, including shrubs, small trees, herbs, lianas, palms, epiphytes.
  - Soil characteristics are recorded and from 2009 onward soil samples will be collected.

- **What size classes/species (all species, commercial only, etc.) are measured?**

(Measurements of most/all species and size classes provide for a more representative inventory)

  - All trees with dbh > 10 cm are individually measured within the 1,600 m^2 plots

- **Can you provide accuracy estimates for the inventory?**

(Accuracy estimates are useful for determining the utility of an inventory for a particular application.)

Yes, as there are various samples for each forest type, ecological region and successional stage.

(2) Are locally-derived, species-specific allometric biomass equations available?

(Allometric equations are needed for computing biomass estimates from forest inventory data. Local allometric equations provide more accurate estimates of biomass than regional equations do.).

Some equations are available applicable to some regions. For some forest types only literature equations are available. Funds are requested to develop the most important missing equations and emissions factors.

If yes, please provide specific information on the source(s) of these equations.

(3) Do you have access to the following remotely sensed data?

(Remotely sensed data can be useful in determining *where* changes are taking place, a question that may not be answered well with traditional inventory data)

- **Satellite imagery**: This is available from MODIS (250 m, from 2000 onward), SPOT 5 (10 m, from 2003 onward), Landsat 5 (30 m, 1990s, 2000, 2002), among others, all imagery are available wall-to-wall. For environmental services project high resolution images (Quickbird and Ikonos) are also available.

- **Aerial photography**. These are available on request at different scales.

(It is helpful to know how extensive a country's spatial data archive is. It is also useful to understand the extent to which data access is a limiting factor by itself.)

If yes, please specify coverage and spatial resolution (e.g., 30m, I km^2) and temporal resolution (e.g., 1997 and 2001, biannual)

(4) What other spatial data do you have access to?

(The following spatial data are needed for more advanced (i.e., IPCC GPG Tier 3) model-based predictions of carbon emissions)

For each category important to you, you could provide: source, resolution, date, and coverage.

- Land cover maps of the 1970s, 1993, 2002. The maps for 2007 will be available at the end of 2008
- Vegetation properties / biomass. National forest inventory (1992-1994 and 2004-2007), regional studies
- Soil types / properties. National soil map 1:250,000; about 25,000 georeferenced soil samples.
- Climate / meteorology. Various climate type maps, such as evapotranspiration (1:4,000,000), Precipitation maps, climate maps (1:500,000)
- Hydrology / river gauges. At the national scale 1:250,000, main rivers, watersheds, availability of subterranean water sources.
- Transportation, Incomplete road maps 1:250,000.
- Demography / population density. Geo-referenced population censuses and counts from 1990, 1995, 2000, and 2005, including various economic, social and infrastructure parameters at the level of cities and rural settlements (and derived marginalization indices). A census of the presence of indigenous groups is available from 2000.

Template question 12. Please state donors and other international partners that are already cooperating with you on the preparation of relevant analytical work on REDD:

(5) How will you work in conjunction with independent national or international consulting teams?

A collaborative team will be set up comprising research institutes that will prepare the national REDD monitoring and forest inventory system and stakeholder consultation, all in close collaboration and consultation with Conafor, INEGI, INE and other governmental institutions. Various independent researchers are participating in the National Consultative Council for Climate Change, which is an advising body for the government on climate change issues. Additionally a data collecting framework will be developed for all government agencies that have established a network of monitoring sites, in order to include the collection of REDD-relevant parameters.

(This question will allow the country to establish plans for improving capacity and service delivery. Describe which ones and their roles.)

[end]