

National communications support programme

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NEWSLETTER

Peru and their National GHG Inventory System: Proposal and Challenges *Excerpt from Peru SNC Report with contributions from Maria Paz Cigaran*

Peru faces many challenges in its attempt to respond to the UNFCCC recommendation to create a permanent mechanism for providing updated national information on Greenhouse Gas (GHG) emissions.

Some of these challenges include:

- The need to establish requirements for sectors, so that they report and supply data for the development of a GHG emissions inventory.
- The need to establish emission limits of air pollution for regular reporting in the Energy, Industrial, and Waste-Management sectors, and to set criteria for classifying land use in the Agriculture sector.
- Constraints faced by public institutions in Peru in

There are a number of challenges in the implementation of a GHG National Inventory System. Most of them are related to the relevance of the data base and its need for frequent updates, while others are related to the institutional organization and the division of responsibilities between different state organizations.

the carrying out of their duties, due mainly to a lack of funding and a lack of specialized personnel to oversee and perform designated functions.

- Lastly, the need to define roles and responsibilities clearly for each sector and level of government (national, regional, and local) within the framework of a national inventory system for GHGs, and to determine performance expectations for certain activities. This issue makes the task of creating a mechanism for data collection a difficult one. Certain agro-industries, for example, are considered to belong to both the Agriculture and Production sectors, and bio-fuel production is currently under the control of the Energy, Production, and Agriculture sectors. In addition, responsibilities are sometimes duplicated.

Capacity-building is necessary in the areas of development and transfer of technology, as well as in the area of inter-institutional coordination. This capacity-building should be aimed at designing a GHG inventory system that acknowledges and makes use of the country's existing efforts to contribute to the management of climate change. One sector that has shown considerable improvement in the use of appropriate information technologies is that of Energy. Unfortunately, however, the example set in this sector has not spread to others.

NEWS

The National Communication Support Programme (GEF/UNDP/UNEP) in collaboration with the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) organized a workshop for countries that are preparing their Initial National Communications (INC) to the UNFCCC. This workshop was one of the key activities of the CGE workplan for 2010 and was held back-to-back with the second meeting of the CGE, from 29 September to 1

October, 2010 in Manila, Philippines. The workshop's overall objective was to provide general guidance and to facilitate the sharing of experience among national teams on the key technical and policy issues related to the preparation of the INC.

The workshop's specific objectives were:

- To discuss technical and policy issues, particularly on how the NC can provide input for relevant national decision-making and

- contribute to the integration of climate change concerns into development priorities;
- To identify gaps, lessons learned, and needs for technical assistance, and
- To collaboratively discuss the next steps to take towards the initiation of the Second National Communication (SNC) and the challenges it poses.

Sixteen participants from 8 countries (Angola, Bangladesh, Bosnia and Herzegovina, Montenegro, Myanmar, Serbia, Syria, and Timor-Leste) attended

the workshop. Participants included Coordinators of the INC projects, experts in various thematic areas, and representatives of national governments and UN agencies. The workshop was chaired by Mr. Eric Mugurusi, Chair of the CGE, and was facilitated by several CGE members, including representatives of UNFCCC, IPCC, UNEP, and UNDP. In their feedback, participants mentioned the usefulness of the collaboration between the CGE and NCSP in conducting the workshop.

What Must Be Done

Peru must confront the task of designing and establishing a mandatory National Inventory System for GHGs, in which the Land Use, Land-Use Change and Forestry (LULUCF) sector will be the priority. In addition, Peru needs to establish a National Platform for Registration and Report, with a set of indicators and baselines for each sector. This will require:

- 1 The strengthening of information systems in each sector, in order to centralize and systematize information consistently and accurately on "activity levels" and emission factors, and
- 2 The implementation of a monitoring system for land-use change and deforestation, which will in turn require:
 - i The creation of uniform criteria for land-use classification,
 - ii Research on carbon stocks in forest ecosystems and on their capacity to capture carbon by species, and
 - iii Updating information on rates of deforestation, deforested areas, degraded areas, and the status of land occupation in the country.

Finally, it is necessary to optimize the methods of quantification of uncertainty and quality control in the inventory process.

UPDATE: WORKSHOPS

Planning for 2011 sub-regional training workshops is well underway. In addition to a global workshop on Lessons Learned from NCs, NCSP intends to hold up to 4 workshops, depending on countries' demands, as well as a number of targeted support workshops for national teams, based on countries' needs. If you have a training proposal that would be useful in your country, please contact Allison Towle at allison.towle@undp.org

The Proposed System

In order to meet this challenge, Peru proposes to design and implement a National Inventory System of GHGs (called SNINGEI for its Spanish acronym). SNINGEI will generate, systematize, and disseminate GHG Emissions information for the country. The technical proposal is currently being analyzed for its enforceability.

The SNINGEI proposal (illustrated in figure 1, *Proposed GHG Inventory Information Flow*) outlines flows of information and responsibilities, broken down according to Peru's sectors. Primary components will be a National Registration and Reporting Platform, indicators and baselines for each sector, and a Verification System designed to optimize methods used for uncertainty quantification and for quality control.

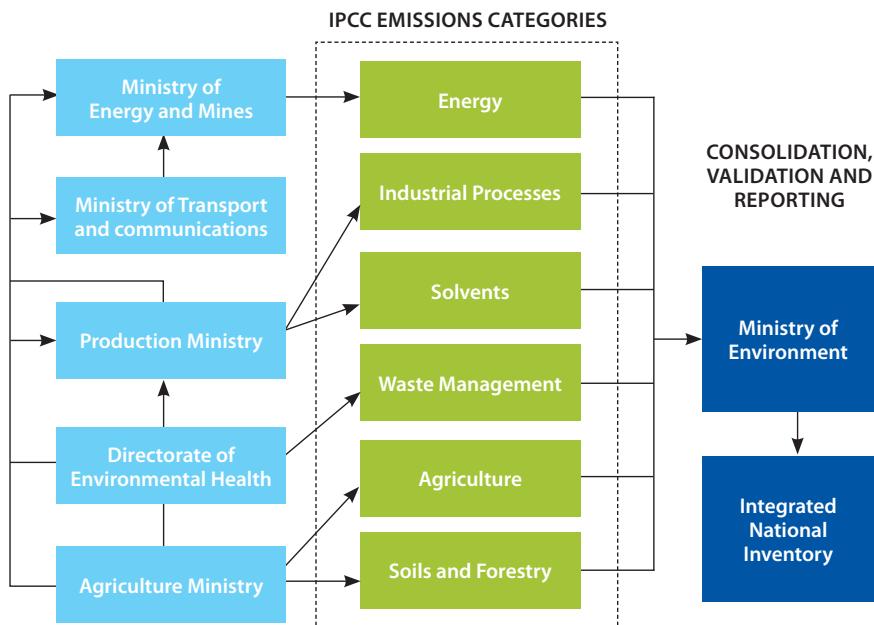
The implementation of this System will strengthen the sectors' information mechanisms, allowing them to generate and systematize information on activity levels and to determine emission factors. The LULUCF sector has priority, since it is Peru's main source of emissions and the weakest in its capacity to manage and generate information. Obtaining high-quality results for the LULUCF sector depends on the establishment of unified criteria for the classification of land use and on updating sector information. In order to obtain such information, SNINGEI will include a Monitoring System of Land-Use Change and Deforestation.

SNINGEI will involve the participation of national, regional, municipal and sector-based authorities; national GHG-emitting entities; technical organizations that research, evaluate and analyse information relating to GHG emissions; and the various institutions and stakeholders working on or interested in climate change and air quality in Peru.

The national Ministry of Environment (MINAM) will be the umbrella entity responsible for SNINGEI. Other ministries such as Agriculture, Manufacturing, Health, Transport, and Energy and Mines, as well as other relevant entities, will be in charge of collecting emissions data from their activities and submitting them to MINAM.

The responsibilities of MINAM include: 1) the preparation and submission of Peru's National Communications to the UNFCCC, 2) the creation of methodological guidelines, indicators/benchmarks, timelines, and forms that GHG-generating entities will use to submit their Annual Sector Reports on GHG emissions, 3) the establishment of criteria used to identify "Macro-emitters" in each sector, and 4) the implementation and monitoring of programs and mechanisms in order to

Figure 1: Proposed GHG Inventory Information Flow



Source MINAM 2009

ensure that the data generated, systematized, and published by SNINGEI meets quality standards set forth in the IPCC guidelines. This last point includes the provision of an expert team on GHG inventories for the LULUCF sector.

The Economic Impacts of Climate Change in Montenegro:

A First Look Report from UNDP-Montenegro country office with special

thanks to Selim Lika and Djordjije Vulikic for providing the findings to the study

Montenegro recently completed its Initial National Communication (INC) to the UNFCCC. However, the INC study lacks an in-depth discussion on two points: 1 how the physical impacts of climate change might affect the economic welfare of producers, investors, and consumers in different economic sectors and 2 how these impacts might affect indicators of economic activity, such as gross domestic product, personal consumption expenditures, private investment, and government spending.

Therefore, a subsequent study was funded by UNDP in Montenegro as a way of filling in the gaps in the National Communication and to pave the way for more in-depth examinations of economic impacts. The study identifies potential climate change impacts in a number of sectors and, in some cases, presents preliminary estimates of the magnitude of these impacts under several different climate scenarios. Please click [here](#) to access the complete report.

The main objectives of the study were:

- To identify the data and state-of-the-art models and methods needed to estimate the economic impacts of climate change and the benefits and costs of adaptation in agriculture and forests, tourism, water resources, and human health in Montenegro,
- To evaluate the country's capacity to develop and apply these data, models, and methods,
- To apply existing data, models, and methods available in Montenegro to make some highly preliminary estimates of the economic value of the physical impacts that were identified in the INC, and finally
- To suggest ways to improve the existing analytical and institutional capacity to estimate the economic impacts of climate change and the benefits and costs of adaptation in Montenegro.

The introduction of the study describes the underlying theory for estimating the economic impacts of climate change. The study identifies two types of impacts of climate change. The first are welfare

impacts, and the second are impacts on indicators of national economic activity.

The four chapters after the introduction focus on the four economic sectors or impact categories in Montenegro: Agriculture and Forests, Tourism, Water Resources, and Human Health.

Each chapter outlines the main methodological approaches, types of models, and databases needed to make comprehensive estimates of climate change damages. It also attempts to outline the current capacity to develop these models and use them to estimate climate change damage in Montenegro. In most cases, this capacity is extremely limited or non-existent. Each chapter also contains short- and long-term recommendations for developing this capacity in the future in the different economic impact categories.

The study uses a "no-regrets" approach to capacity building. In other words, the creation of climate change models, methods, and databases in Montenegro is based on a rationale of helping the country adapt to climate change through wise, forward-thinking economic development that benefits people as well as the natural environment and ecosystems.

The last part of the study, "Conclusions and Recommendations," addresses capacity-building assessments.

This study made a preliminary estimate of climate change damages in Montenegro in the following areas:

1 Agriculture and Forests: reductions in maize yields nationally and the effects of this on gross farm revenues. Information was used from a crop yield simulation study in Croatia. It also included an analysis of increased crop water demand and costs of pumping and distributing additional water to crops on irrigated fields both existing and new.¹

2 Tourism and Recreation: the effects of increased temperatures on international and domestic tourism, including tourist traffic and expenditures. Information from the Hamburg Tourist Model (HTM) was used for one estimate; information from the PESETA project methodology for estimating impacts on tourism was used for another.

3 Water Resources: the effects of reduced runoff on gross revenues from the sale of electricity from the Mratinje Dam hydroelectric plant on the Piva River.

¹ One additional estimate was undertaken but yielded unreasonable results due to poor data: it was the estimate of effects of climatically-induced reductions in beech tree growth on rotation ages and land values for even-age stands of beech in Montenegro.

4 Health: the effects of higher temperatures on the additional lives lost due to heat-related mortality in Montenegro.

Since these are the first such estimates of climate change damages in Montenegro and because there are so few similar estimates for other Balkan countries, it is difficult to put them into perspective without much more information about the individual sectors. Nevertheless, these results do raise a number of important research and policy issues.

Conclusions and Recommendations

Main Conclusions

1 Need for Macro-economic Model Especially limiting in the tourism case studies was the apparent lack of a macro-economic model for Montenegro and for the larger institutional modelling community.

2 Value of Preliminary Estimates of Climate Change Damages This study has demonstrated that, even in the absence of more sophisticated data and better models, preliminary estimates such as case studies can provide useful information about the economic impacts of climate change. This can be a useful guide for making decisions on development policy and for building the capacity to analyse economic development in the context of coping with climate change.

3 Need for Better Models and Data There are still significant gaps in both models and data in every examined sector in Montenegro.

4 Priorities for Capacity Building Based on the results of the case studies and the development plans of the country, the priorities for developing effective models appear to be as follows:

Highest priority

- i Aggregate tourism participation models for the country as a whole, and
- ii Rainfall runoff and hydro-economic models for basins targeted for future hydroelectric development.

Lower priority

- i Stand-management models (and supporting data) for forests. These should include growth models that simulate the impacts of climate change and forest disturbances on the growth of managed forest types,
- ii Vegetation models that simulate forest growth and development in unmanaged ecosystems,
- iii Crop-yield models for important crops in the country,
- iv A dynamic, two-sector model of the Agriculture and Forestry sectors, for

UPDATE: TOOLKIT FOR DESIGNING CLIMATE CHANGE ADAPTATION INITIATIVES

UNDP is pleased to announce the launch of the Toolkit for Designing Climate Change Adaptation Initiatives. The Toolkit is a hands-on guide for designing adaptation initiatives at national, sub-national, and community levels. It is based on lessons that have emerged over the last 4 years from UNDP's support to countries attempting to access financing for adaptation.

The Toolkit provides step-by-step guidance on key elements to be considered when developing and designing adaptation initiatives. It also differentiates between adaptation and traditional development initiatives. Moreover, the Toolkit outlines fundamental components of the design process, the approach to building stakeholder consensus, and key tools and methodologies. Throughout the

text, features such as useful tips, case studies, and explanatory diagrams attempt to make the guidance material more user-friendly.

This publication is part of a series of practical toolkits and guidance documents that UNDP is developing to support countries in the preparation of low-emission, climate-resilient development strategies.

The Toolkit can be downloaded [here](#)



example through integration with the European Forest and Agricultural Optimisation Model (EUFASOM).

Main Recommendations

1 Macro-economic Model A Computable General Equilibrium (CGE) model should be developed for Montenegro.

2 Data Collection Efforts The case studies revealed that data collection must be improved in all sectors. An effort to do a case study on the impacts of climate change on managed forests failed due to a lack of growth data.

3 Model Development It is recommended that the physical impact models and related integrated environmental-economic assessment models identified above be developed over a period of five to ten years.

4 Coordination of Data Collection and Model Development It is recommended that data collection efforts by the government be coordinated with model development efforts.

5 Developing In-country Capacity The capacity to build and implement useful models for planning and managing natural resources and estimating the physical and economic impacts of climate change should be developed with a focus on the long-run welfare of human capital and institutions in Montenegro.

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