Reference frameworks and Environmental Statistics in Mexico

1 Introduction.

A short paper to address the need for and usefulness of a framework for environment statistics and a description of our experience in the implementation of the United Nations Framework for the Development of Environment Statistics (UN-FDES) in our country was requested by UNSD as preparation for the Expert Group Meeting. To fulfill that request, in the following pages an historical review of the development of environmental statistics and frameworks used in Mexico is first considered. Then, given the particular time of major institutional change in the country regarding the Statistical System, those changes are described and used to explain the particular interest of Mexico to participate in the revision of the UN-FDES and related documents. Finally, some desirable characteristics and considerations of the framework are presented. In particular, the need to incorporate the ecosystem perspective into the UN-FDES is stressed.

2 An historical review.

Development of environmental statistics naturally follows that of the Agencies in charge of environmental issues. In Mexico during the 1970´s and 1980´s environmental matters were dispersed. The main responsibility was, first, on the Ministry of Health and, then, on the Ministry of Urban Development and Ecology. However, as it was said, many other Agencies were responsible for different issues, mainly concerning natural resources. It was only in 1994 that the *Secretaría del Medio Ambiente, Recursos Naturales y Pesca* (*SEMARNAP*) (Ministry of the Environment, Natural Resources and Fisheries) was created, integrating previously dispersed

responsibilities: water, forestry, fisheries, etc. This established the basis for the integration of statistics in all these subjects.

At the beginning of 1990´s, the *Instituto Nacional de Estadística, Geografía e Informática* (*INEGI*) (The National Statistics, Geography and Informatics Institute) started work on environmental statistics. There were two efforts: on the one hand an office with responsibility to compile and integrate environment and natural resources statistics and indicators was established. On the other, within the National Accounts Office, the development of economic and environmental accounts started. The UN Framework for the Development of Environment Statistics was adopted to organize statistics and indicators, and for economic and environmental accounting what eventually evolved to SEEA. It is important to note that, *INEGI* being the main institution responsible for geographical information in Mexico, thematic charts, at different scales, corresponding to land use and vegetation, edaphology, hydrology, mineral resources, etc., have also been produced.

In 1994, two national reports were published: *Informe del Estado del Medio Ambiente* (State of the Environment Report) produced by *Instituto Nacional de Ecología* (*INE*) (National Ecology Institute later incorporated to *SEMARNAP*) and *Estadísticas del Medio Ambiente* (Environment Statistics) produced by *INEGI.* These two efforts were unified to produce joint reports in 1997 and 1999. This started the coordination of the two institutions.

In 1995, Mexico being a member of OECD, *SEMARNAP* adopted the Pressure State Response (PSR) Framework to organize and integrate statistical work. Even today the causal scheme, PSR is maintained, not the “issues” dimension of that framework as some of them are not too relevant for the country.

During the second half of the 1990s and the 2000s these two institutions, *SEMARNAP* (now transformed to *SEMARNAT* –since fisheries was incorporated to the Agriculture Ministry) and *INEGI,* have continued to produce and integrate the majority of statistics, and in the case of *INEGI* geographical information, on the environment and natural resources.

INEGI has preserved the use of the UN Framework for the Development of Environment Statistics with minor modifications in the media dimension for most of its recompilation work –integrated in the corresponding section of the institutional web site-, although in some instances, for example the causality dimension and work on sustainable development indicators under UNEP leadership at the regional level, different frameworks have been adopted: PSR and Indicators of Sustainable Development (ISD).

SEMARNAT is responsible for the integration of the *Sistema de Información Ambiental y de Recursos Naturales (SIARN*) (Environment and Natural Resources Information System). *SIARN* integrates statistical and cartographic data bases as well as indicators and documental information. The reference framework used for *SIARN* is in the thematic dimension a mixture of OECD´s PSR Framework issues, administrative considerations and the Sustainable Development Indicators' Framework.

3 Present institutional situation in Mexico.

Last year a major legislative effort to better coordinate the statistical and geographical system in Mexico came to an end. In 2006 a Constitutional Reform was approved by Mexico´s Congress. The Reform instituted the *Sistema Nacional de Información Estadística y Geográfica* (National Statistics and Geographic Information System) and established an autonomous regulation and coordination organization for it. Last year Congress approved the *Ley del Sistema Nacional de Información Estadística y Geográfica* (National Statistics and Geographic Information System Law) which

implements the Constitutional Reform. The Law defines System as the set of public administration entities –of federal, state and municipal levels- which produce National Interest Information, they are denominated units; detailed organization of the System establishing a Social and Demographic, an Economic and a Geographical and Environment Subsystems; it also establishes governing bodies for subsystems and thematic working groups. On the other hand, the Law defines *INEGI* as the autonomous regulator and coordinator of the System; establishes a governing body (*Junta de Gobierno*) for *INEGI* and, therefore, for the System.

A year ago, October 2008, the *Junta de Gobierno* was designated and started work. Aside from continuing with regular production responsibilities: national censuses, national accounts, household and industrial surveys, etc., one important and immediate task for the *Junta* and *INEGI* has been to implement Law dispositions regarding the System.

4 Our need for reference frameworks.

In the case of the Geographical and Environment Subsystem, particularly with respect to the Environment component contact has been established with public administration entities producing statistical information –there are several scores of them- , to know their work and begin coordination. As a result of these activities it was clear that there was a need to have a model to guide the production of environmental statistics. The model should consider as a first element a conceptual framework. With it several other tasks could be tackled: to evaluate current statistical production and use and, based on that, formulate a strategic development plan to fill in gaps and improve statistical work; determine what should be considered National Interest Information; devise the best form to organize the Subsystem units; develop technical regulations to improve quality and interoperability of statistical data, etc.

The conceptual framework is, then, the basic building block of our model to develop environmental statistics. Therefore it is important and relevant for Mexico, at this particular time of major institutional change, to be aware of UN developments regarding reference frameworks for environmental statistics and participate in revision of the UN Framework for the Development of Environment Statistics and related documents.

5 Characteristics and considerations of the framework.

The framework should provide an articulated structure of the following elements:

- A substantive environmental dimension: Themes, sub themes, variables and parameters to be estimated.
- A causality dimension: UN, OECD, EEA or SD alternatives are candidates.
- Incorporate the ecosystem dimension.

It should also provide detailed recommendations about time and space, and a clear relationship with the environmental components of the SEEA and the Sustainable Development Indicators Framework.

The first element Themes, sub themes, variables and parameters to be estimated is quite clear. It is necessary to have in mind that this element is highly dependable on each country´s level of development and geographical characteristics. As such it should be highly flexible and comprehensive.

The need for a causality dimension is well established; however there are many options available. In Mexico OECD´s PSR has resulted in a useful tool to organize information. We feel that EEA´s DPSIR scheme would be too complicated for us at this moment. The UN alternative has also been

used in Mexico. In our view the ISD approach is too simple. Maybe this dimension should be left to the countries choice.

To incorporate the ecosystem dimension into the revised UN-FDES is without doubt the principal task forward. The systemic approach to environmental issues integrates in space the interaction of biotic and abiotic elements and renders a better understanding of the phenomena. This dimension is as least as important as causality. Derived from the Millennium Ecosystem Assessment (MEA) – in Mexico a country exercise along the lines of MEA, *Capital Natural de México*, has been recently concluded- there has been an international trend to better address statistics from the ecosystem perspective. This concern to incorporate the ecosystem dimension into the SEEA has been dealt with in discussions within the London Group on Environmental Accounting. There it has been suggested that failure to integrate that dimension would eventually make the SEEA irrelevant for public policy concerns.