

Work Plan – Pilot Project for Metadata Development

This plan was developed as part of the Central American Project for Geographic Information (PROCIG for its abbreviation in Spanish – <http://www.procig.org>) and its work in the countries of Central America. This is a generic plan with suggested steps for a metadata development project in institutions that manage geographic information.

1. Identify and Contact the departments and projects that manage or develop geographic information within each of the participating institutions.

An important component of maintaining and archiving metadata is the development of a comprehensive inventory of the geographic information existing in each institution. Many institutions (especially governmental bodies) can be fairly segmented with multiple departments and projects that have Geographic Information Systems (GIS) or information that can be geo-referenced. Therefore the first step in the compilation of a geographic inventory for each institution is the identification of all departments and projects within the institution that manage GIS or geographic information in digital or paper format that can be geo-referenced.

Once these departments and projects are identified, a letter should be sent to the GIS managers that describes the concept of metadata, the project itself, and that requests an inventory of their existing geographic information. The following is a sample list of information that is valuable for the creation of a geographic inventory (and for the eventual documentation of metadata):

1. **Map Title:** The title of the map or table as it appears in published form (the finalized, printed version).
2. **File Name:** The name/title/ of the map or table as it appears in the home computer directory.
3. **Original Source:** The original source of the data – it is possible that the department is not the original source of the data but that they digitalized it from its paper source – in which case, the original source needs to be documented.
4. **Digital Source:** The digital source of the data – important to document if the original source is different (see Original Source above).
5. **Format:** The digital format of the data – whether a table in Excel (.xls), a Database File (.dbf), an ArcView shapefile (.shp), ArcInfo file (.arc) – as well as whether the geographic information is in Raster or Vector format.
6. **Scale:** The scale of the map in meters or kilometers.
7. **Projection:** The map projection used, with specifications.
8. **Publication Date:** The date of finalization / publication of the data / map.
9. **Map Image:** An image of the map in jpeg (.jpg) format.

The letter should also request a personal meeting with the GIS manager to explain more about the project, metadata and NSDI (National Geo-Spatial Data Infrastructure) efforts in the country, as well as to collect the information necessary for the metadata documentation.

2. Visit each department or project with geographic information to identify those that work directly with GIS, view their data, and explain the information needed to write the inventory as well as the metadata.

A personal visit to each department with GIS in the institutions is important not only for the gathering of information necessary for the metadata documentation but also to inform the GIS manager and technicians of the importance of metadata and to involve them in the formation of a GIS Users' Network between the participating institutions. Personal visits take a significant amount of project time but produce more results than communication with departments through other media (letters, telephone calls, e-mail). In addition, the involvement of the GIS managers and technicians in the project and in metadata and NSDI efforts should be a principal objective of any metadata development project, in the creation of a GIS Users' Network and to ensure that the metadata work in each department and that intra- and inter-institutional communication will continue once the pilot project is completed.

3. Complete the geographic inventory and begin metadata documentation (according to the prioritization of each institution), using MetaLite.

Once the information from the various departments has been collected it can be compiled into a single institutional inventory that provides a basic description of the maps and other geographic information existing in each department. The objective is to obtain a complete geographic inventory of the institution in order to publish it on a website.

In the time allotted for a pilot project, it may not be possible to create a metadata file for each entry in the institutional inventories. Therefore, once the inventory is complete, the contact person from each institution can create a priority list of their inventory for the documentation of the metadata, the objective being for the project to document examples from each subject category and department in the inventory.

A good program for metadata documentation is MetaLite, which was developed by USGS (United States Geological Survey) and UNEP (the United Nations Environment Program). The program is very basic for the documentation of metadata, it functions in multiple languages, and is perhaps the most implemented by other regional and international groups than other metadata programs (to download a free Version 1.7.5 of MetaLite go to the following website: <http://edcnts11.cr.usgs.gov/metalite/download.html>).

4. Collect Map Images from each Department.

As part of the information being gathered from each department or project with GIS, it is important to collect a map image of each map produced by the department (in jpeg format - .jpg). These map images should include a map title, legend, source documentation, and scale. These jpeg maps will be published in the website (linked to the inventory and the metadata of each map).

5. Design a Website of Geographic Information for each institution.

If the participating institutions already manage an institutional website, the objective of the project should be to create a webpage of Geographic Information and link it to the original institutional website. With each institution, it is important to identify where to place links to this webpage so that any user can easily access the page from the institution's homesite.

The format for these Geographic Information sites should be similar for each institution, and should include general information on the project, metadata, and NSDI, and should provide links to the Geographic Information sites of the other institutions (all this in addition to the inventory and the metadata).

The pilot project should aim to have the Geographic Information websites published in the Internet by the end of the project time. However, during the course of the project, it is important to identify someone from each institution who will be in charge of updating both the website and the metadata.

6. Capacity Building in Metadata Development for GIS Technicians.

An additional objective of the departmental visits should be to identify a GIS technician from each department or project who will receive instruction in the development and documentation of metadata. This person will receive a one-day course (along with technicians from other departments and projects) that will cover the topics of metadata and NSDI, will give instruction in how to write metadata files using MetaLite, and at the end of the course will provide forum for a discussion on how to proceed as an institution in the development of metadata.

It would be a helpful part of this capacity building if each participant were to receive a CD with the MetaLite program ready for installation in their department as well as documents of interest on metadata and NSDI.

The project consultant and the primary contacts from each institution should be the people in charge of organizing and instructing the day-long course. It is important to plan for this capacity building session early within the course of the pilot project so that the proper arrangements can be made for invitations, refreshments, the preparation of supplemental materials, and reservations of rooms and computer equipment (the instruction day itself should take place at the end of the pilot project time).

7. Create a GIS and Metadata Users' Network of the GIS managers and technicians from each institution.

The creation of a national GIS and Metadata Users' Network is an important component of the formation of NSDI in a country. A main objective of the pilot project should be to create a group of GIS and metadata users from each institution that are able to meet periodically (monthly) to discuss and exchange ideas on topics such as GIS development, metadata development, standards for geographic information within the

country, institutional GIS projects, and how to share information. The idea would be to invite a GIS technician as well as a manager from each department that manages a GIS to be part of this Users' Network (technicians will be able to speak specifically about the data and projects their department generates and manages and the manager can speak about the future actions of the department as well as participate in decision-making matters. For some institutions, the number of technicians and managers involved in the Users' Network could be quite large, but it would be valuable to include each department, in order to better unify the GIS at an institutional level. Of course in the case of a very large institution with multiple GIS entities, it might be a better idea to create an institutional GIS users' group and then send representatives from that group to the national GIS Users' Network meetings.

During the course of the pilot project, it would be valuable to hold at least the first two meetings of the GIS Users' Network. The project consultant and the primary contacts from each institution would be in charge of these primary meetings with the objective of choosing, once the group is formed, a Coordinator for the Network, who would arrange the meetings and manage the correspondence for the group. The initial group can also plan how to involve more institutions (universities, NGO's and other government bodies).

8. Identify someone from each Institution (in GIS) to act as the coordinator of metadata and the Geographic Information webpage.

Early in the course of the project it is important for each institution to identify someone who will act as Co-ordinator of Metadata and the Geographic Information website. Even though GIS technicians from each department will have had instruction in metadata documentation by the end of the project and the objective is that they will develop their own metadata files, it will be necessary to have someone at the institutional level who can co-ordinate the updating of the metadata files, who can be the link between the institution and the Clearinghouse Node, and who can update the Geographic Information website (each activity should be done on a monthly basis). An institutional co-ordinator would also help maintain strong communication between the departments using GIS within the institution. This co-ordinator would be an integral part of the GIS Users' Network.

Within the plan of the pilot project, it would be helpful to identify the institutional co-ordinators before the first meeting of the GIS Users' Network, so that the project consultant can work directly with these co-ordinators for the final part of the pilot project. The primary contacts for the project from each institution should be in charge of choosing the institutional co-ordinator as well as making the arrangements within their institution for this co-ordinator to dedicate a portion of their work time to the activities listed above.

9. Give a presentation on the State of Geographic Information and GIS in each institution, Metadata, and NSDI.

As part of the capacity building, the project consultant and the primary institutional contacts should give a presentation on the status of geographic information in each institution, Metadata and NSDI efforts. For this part of the day-long instruction, it would be important to invite others from the institutions (including the Directors of the departments managing GIS).

10. Link and register the Metadata from the institutions with the Clearinghouse Node.

An important part of the pilot project is to decide where and how to register the metadata from the institutions with a Clearinghouse Node – whether each institution will create and maintain their own Node or if they will choose to connect their metadata with an existing country Node.

Once the Node is chosen and a few metadata files are prepared from each institution, a plan needs to be developed on how to register and update the metadata.

11. Final Report of Results.

It is the responsibility of the project consultant to document the results, challenges, successes and lessons learned from the pilot project and distribute the final report to each of the participating institutions.

12. Maintain Contact with the National Geographic Institute.

If the National Geographic Institute is not one of the institutions directly involved in the pilot project, it is important that the participating institutions are in agreement to maintain strong contact with the institute on the progress and work of the project as well as to aid them in NSDI efforts and the GIS Users' Network.