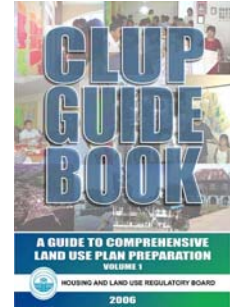


1.05 Relationship of the GIS Cookbook to CLUP Guidebook Volume 1

1.05.01 Volume 1 in Brief

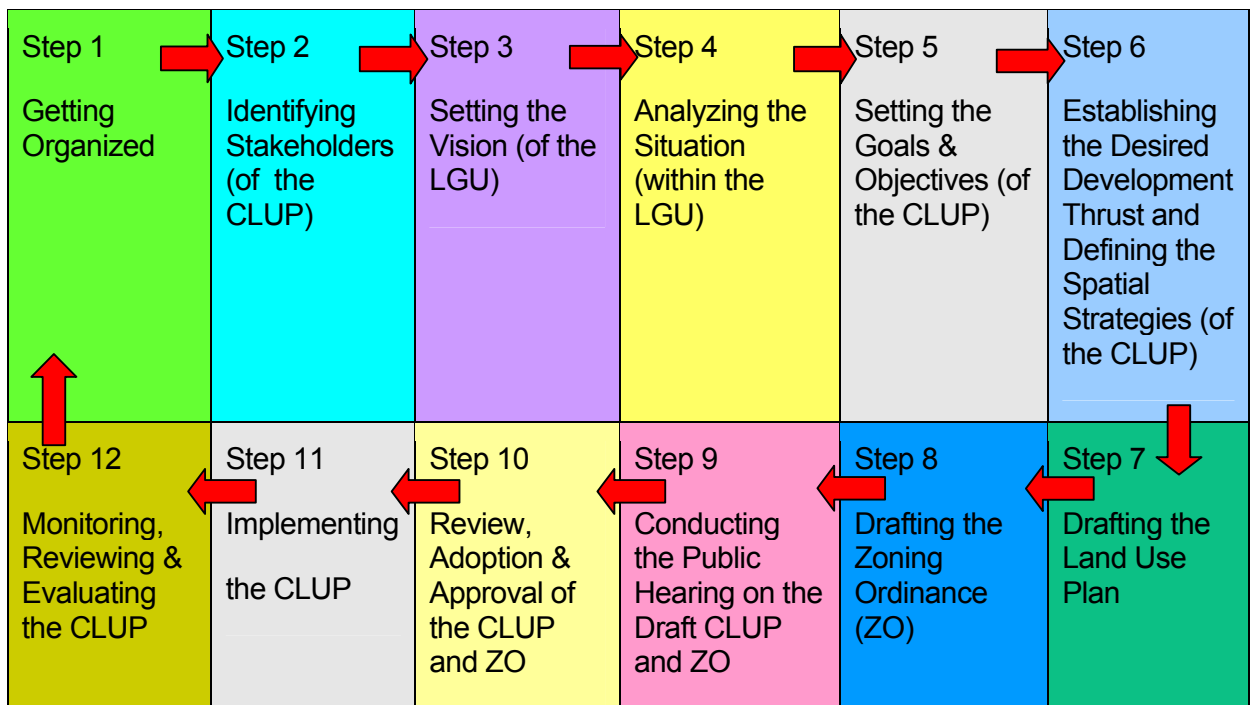
This volume provides the stepwise process of formulating the CLUP. It opens the door to a flexible planning process and documentation in relation to the municipal profile, that enables those predominantly rural municipalities to gather only those information applicable and necessary for the formulation of their respective CLUPs, without having to undergo the same in-depth analysis and sophistication in the planning documentation and process as those highly urbanized cities and municipalities, which are more likely to face competing and conflicting land uses that will also generate more sophisticated geographic information products.



Volume 1 summarizes the rationale for land use planning and the need for the CLUP. It also identifies and describes the steps in the process of CLUP preparation.

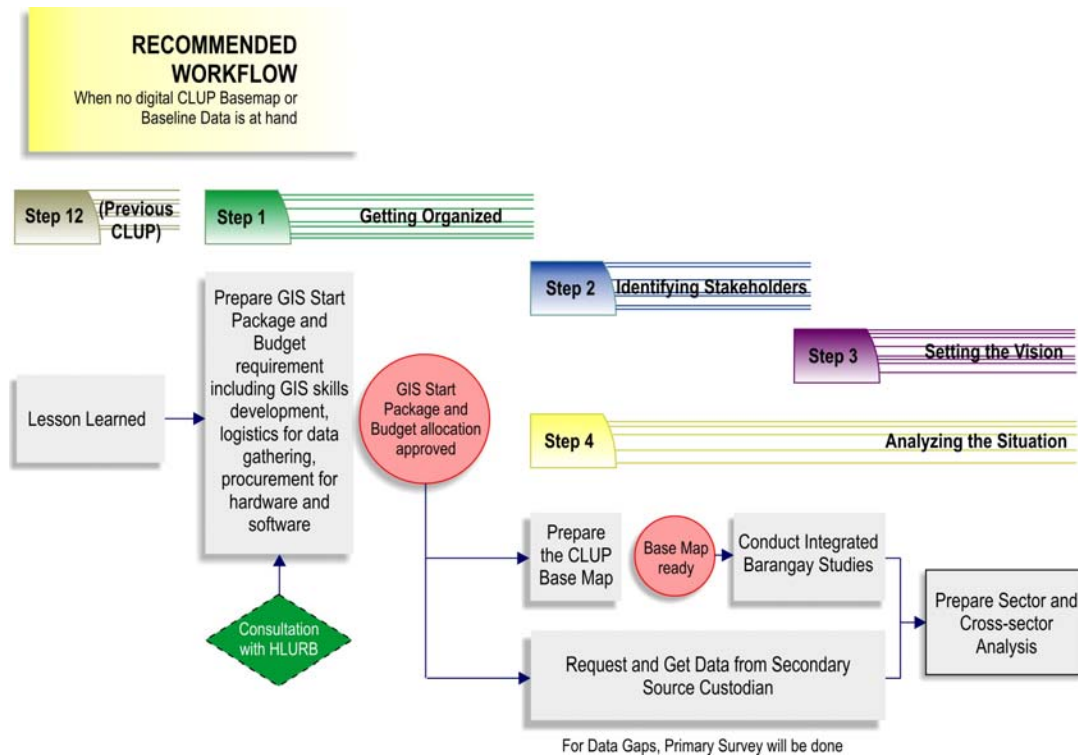
The GIS Cookbook provides the tools for GIS in the form of **Information Products** that are reflective of a planning process that is participatory, and a CLUP that is both regulatory and catalytic.

The step-wise process given in Volume 1 is shown as follows:



The **GIS Cookbook** elaborates on those **Information Products** (maps, graphs, tables, etc.) that are necessary to fully equip the Planner with the knowledge and understanding of the specific Step in the Planning Process.

It should be noted that some of the steps in the process shown in the above CLUP Process illustration, need not be sequential but can be done simultaneously, such as Steps 2, 3, and 4. And since some of these Steps will need more graphic displays of data than the others, it is important to exercise wider flexibility in order to maximize the time needed in the whole process. For example, if there is no available digital base map or baseline data yet, Step 4 can proceed simultaneously with Steps 2 and 3 as this requires a lengthier period to prepare. This is shown in the illustration below.



1.05.02 GIS Information Products for the Steps in the Planning Process

Information Products are the instructional components needed to present a CLUP Step in a comprehensive way. They consist of tables, graphs and maps in both digital and paper-based formats.



Information Products for Step 1 – Getting Organized (to Work with the CLUP)

It is equally important to “plan for the planning process” in order to anticipate and prepare the resources necessary for the planning exercise, thus enabling a smooth implementation and timely accomplishment of the planning outputs.

Making use of GIS as a tool in CLUP preparation will require the mobilization of the ‘GIS Start Package’ (consisting of five components) to ensure that the needed resources for the GIS activities are readily available.

The GIS Cookbook provides the guidelines for the procurement of sustainable hardware, software, development of human resources and possible consultant involvement. In Step 1, it is recommended that the LGU consult with HLURB to find out the scope of data capture that would be applicable for the respective municipality/city based on class, size, economic resources and profile, and so that the budget can also be assessed properly. For more information, see Chapter 3 (The Cornerstones of a Functioning GIS) and referred subjects in the Toolbox.

Information Products for Step 2 – Identifying Stakeholders (of the CLUP)

No special GIS requirement has been identified for this Step in the CLUP process.

Information Products for Step 3 – Setting the Vision (for the CLUP)

No special GIS requirement has been identified for this Step in the CLUP process. However, if the city/municipality already has an existing Vision statement, it should be revisited in this Step for further refinement if necessary.

Information Products for Step 4 – Analyzing the Situation

Step 4 of the planning process - Situation Analysis - basically answers the question: Where are we now? It is both analytical and diagnostic, geared towards identifying issues, potentials and future development needs and the spatial requirements of the city/municipality. Assessment consists of technical and participatory methods.



Technical assessment is based on factual data derived from surveys, official publications and records of the city/municipality, concerned national agencies and other entities. It involves the use of indicators such as proportions, rates, frequencies, qualities/conditions (e.g. severity,

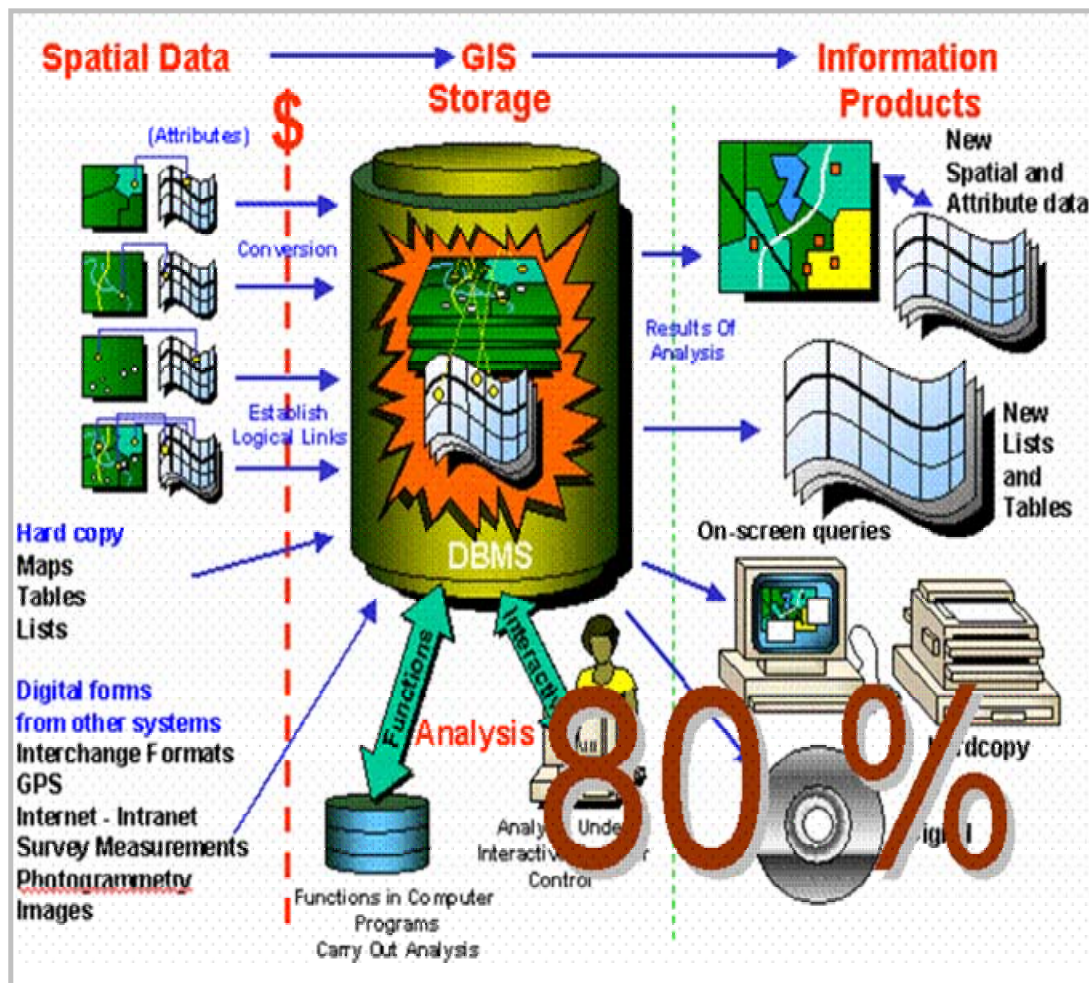
critical, etc.), standards and other parameters that are vital in characterizing the current situation. On the other hand, participatory assessment is based on the results of barangay/community consultations, focus group discussions (FGDs), meetings with key informants, multi-sectoral meetings, etc. These activities facilitate the generation of the community's felt needs, desires, and perceived issues and opportunities. Suggestions to address issues and concerns can also be derived from this exercise.

It is important to prepare the digital CLUP Base Map at the outset because this takes time to accomplish (see the IP on Basemap preparation found in the Toolbox,

Chapter 4.05.01). It is essential to have the Base Map readily available as soon as possible to facilitate sectoral data gathering and analysis.

It is also necessary to prepare the **demographic data** upon which the baseline studies and sectoral analyses for education, health, transport, agriculture, etc. will be based. It is recommended that only one population projection be used for all the sectoral studies.

In general there is a lack of accurate current data for municipal land use planning, and much time is needed to acquire data for the CLUP planning. Data acquisition makes up about 80% of the total cost of establishing a CLUP GIS.



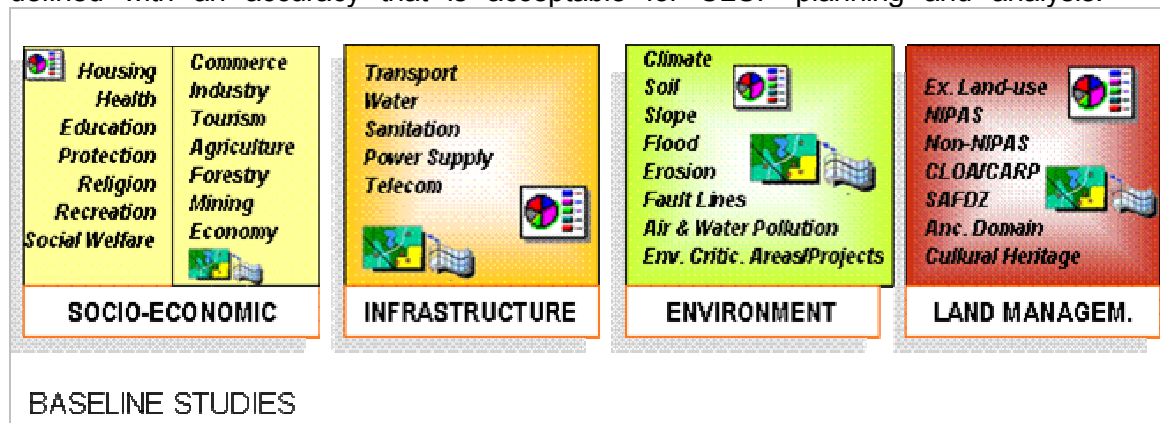
With regard to data, see the distinction between **Key** and **Optional indicators** in Chapter 3.03.02. As mentioned previously, it is important to consult with HLURB at the outset of Step 1 in order to determine the level of data capture applicable to the municipality / city being planned, in accordance with its municipality class, size, economic resources and profile. This should result in a more focused specification of data tailored to the particular requirements of the specific LGU's CLUP. Once the scope of data requirements has been determined, the data gathering activities should

proceed per specifications, and the primary surveys and secondary data acquisition (from the respective entities) should be conducted in a timely manner. A template (Data Request for CLUP Preparation, found in the Toolbox, Chapter 6.05) in combination with the Information Products described in Chapter 4 should be used in this process.

Some of the basic data about demography is presented for the entire LGU, hence no GIS is used. In this case, demographic information is presented in Excel format as tables and graphs (see tables in Chapter 5.02).

Other basic demographic data are broken down to Barangays, and this may be elaborated in GIS format (see table in Chapter 5.02.04 as an example). Furthermore, the data extracted from these layers can be used as components of the baseline studies in this step and in Step 5. For example, when analyzing the provision of health services, the current and projected population data will be matched with the planning standards and the current availability of basic health facilities.

Under Step 4, thematic spatial layers -**Baseline Studies**- need to be prepared for all sectors and sub-sectors included in the CLUP. The locations of service facilities such as schools, health clinics, etc.; infrastructure such as roads, power transmission lines, etc.; and those areas under protection such as ancestral domains etc.; need to be defined with an accuracy that is acceptable for CLUP planning and analysis.





There may be two ways to find out the location of the sector's features:

1. Organize a field survey to capture the locations. For example, go to the locations of the health clinics and track the positional coordinates using a GPS.
2. Get secondary source data and customize it to fit the specific criteria or the specific sector feature. For instance, to identify the distribution of various soil types, get a printed map from the Bureau of Soils and Management (BSWM), and this can be cropped and overlaid on the base map to constitute the soil sector component.

It is also recommended that a proper **File and Folder** system should be introduced in the computer(s) that will manipulate and store the CLUP GIS data (see Chapter 3.04.03, 'Guidelines for File and Folder Management').

In the Toolbox, instructions are given on how to carry out the following:

-  How to conduct a field survey to get/retrieve spatial data (Chapter 4.19)
-  How to convert secondary source data into spatial data layers (Chapter 4.21).

Chapter 4.19.02 also provides an example on how to conduct a comprehensive and integrated primary survey at the Barangay level. The survey will identify basic data as well as issues and concerns needed for baseline studies that may encourage participatory planning activities.

The **Needs Assessment Information Products** will be a comprehensive combination of maps which will reveal weaknesses or gaps in the municipality/city's distribution of goods and services as well as the LGU's basic needs based on population projections. GIS will prove useful for this and Chapter 1.06 shows how it can be used to make it transparent to the general public.

The **Risk & Suitability Analysis Information Products** will focus on the constraints and potentials originating from the natural environment and man-made/enforced restrictions/ rules and regulations. These will provide the bases for some examples for the formulation of a sustainable development plan for the municipality/city.



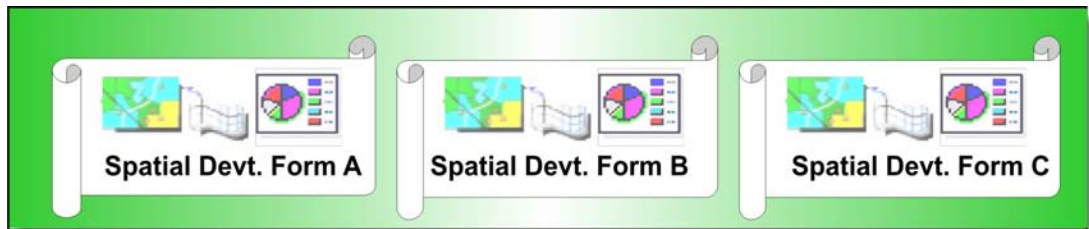
Information Products for Step 5 – Setting the Goals and Objectives (for the CLUP)

The next step after the data gathering and analysis is the formulation of goals and objectives that will help the municipality/city to achieve its vision. It is important that the goals and objectives reflect the “common good” and consensus of the broader community so that implementation of the plan effectively engages all sectors, and ownership is shared community-wide. A good way to achieve this is to conduct participatory goal-setting processes in public settings where the Needs Assessment and Risk & Suitability Analysis Information Products can be presented. The presentation should be adjusted to the audience's assimilative levels (see Chapters 1.09 and 4.21.02).

Information Products for Step 6 – Establishing the Development Thrust and Spatial Strategies

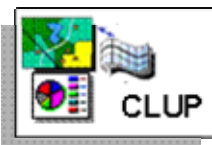
This step is critical in determining the future overall spatial development of the municipality/city. It involves the understanding of what is appropriate, feasible and possible through an exploration of different land use alternatives or scenarios. After exploring at least three alternatives, the municipality/city will prepare a draft structure/concept plan based on a preferred alternative. Depending on the planners' levels of knowledge, the use of GIS at this stage will be limited to actual presentation

and display work (for beginners), or advance to a more sophisticated spatial analysis (for those with more advanced skills).



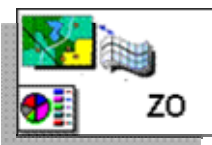
The information products in this step are the three alternative **Spatial Development Forms** and the preferred structure/ concept plan (see Chapter 4.12 in the Toolbox).

Information Products for Step 7 – Preparing the Draft CLUP



It is at this stage that the location and details of the Land Use Plan components are put into final draft form. GIS will be useful in furnishing the templates which are based on map standards in terms of format and symbology (see Chapter 4.21.02). Thematic maps can also be extracted from the GIS and be included in the narrative text of the CLUP. The information product in this step is the **Draft Land Use Plan Map**.

Information Products for Step 8 – Preparing the Draft ZO



The drafting of the Zoning Ordinance (ZO) basically entails translating the Comprehensive Land Use Plan (CLUP) into a legal document / tool. In general, Zoning has the same features or land use classifications as the CLUP, except that it provides for more detailed information on zone boundaries and use regulations / controls, among others. In the same way as the draft CLUP, there is a GIS application for the Zoning Ordinance that will facilitate the preparation thereof. The information product in this step is the **Draft Zoning Map** (see Chapter 4.15 in the Toolbox for details).

Information Products for Step 9 – Conducting Public Hearing on CLUP/ZO



This involves a 3-stage process namely: public display and information dissemination; conduct of public hearing/consultation, and the Land Use Committee Hearings. The process aims to inform the general public and ensure an objective and participatory review of the draft CLUP / ZO and to encourage ownership of the plan and gain support for its implementation.

GIS will be a useful instrument in translating the plan into a format that will be understood by the stakeholders. The information products in the previous step can be printed out and displayed and / or be included in a PowerPoint presentation. The information products in this step are the refined **Land Use and Zoning Maps**.

Information Products for Step 10 – Reviewing, Adopting and Approving the CLUP and ZO



Step 10 involves the mandatory and comprehensive review of the CLUP and ZO, after which adoption of the CLUP and enactment of the ZO by the Sangguniang Bayan/ Panlungsod and approval by either the Sangguniang Panlalawigan or HLURB will take place.

This step will benefit from GIS in the form of excellent digital maps compared to the tedious process of reviewing analog maps.

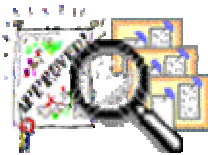
Information Products for Step 11 – Implementing the CLUP and ZO



Implementation of the CLUP will require resources, institutional structures and procedures, among others. The local government code allows flexibility for the LGU to design and implement its own organizational structure and staffing pattern, taking into consideration its vision, mission, goals and objectives as contained in the CLUP, and its accountability to the community.

GIS enables the planner to readily extract data from the database and CLUP project profile, making it easier for the LGU's to manage / implement projects as well as share project information with stakeholders / project implementors.

Information Products for Step 12 – Monitoring & Evaluating the CLUP/ZO



With the CLUP and its implementation program established, assessment procedures for its effectiveness must be instituted. Monitoring and evaluation are performed to assess how fully and how effectively a plan is being carried out.

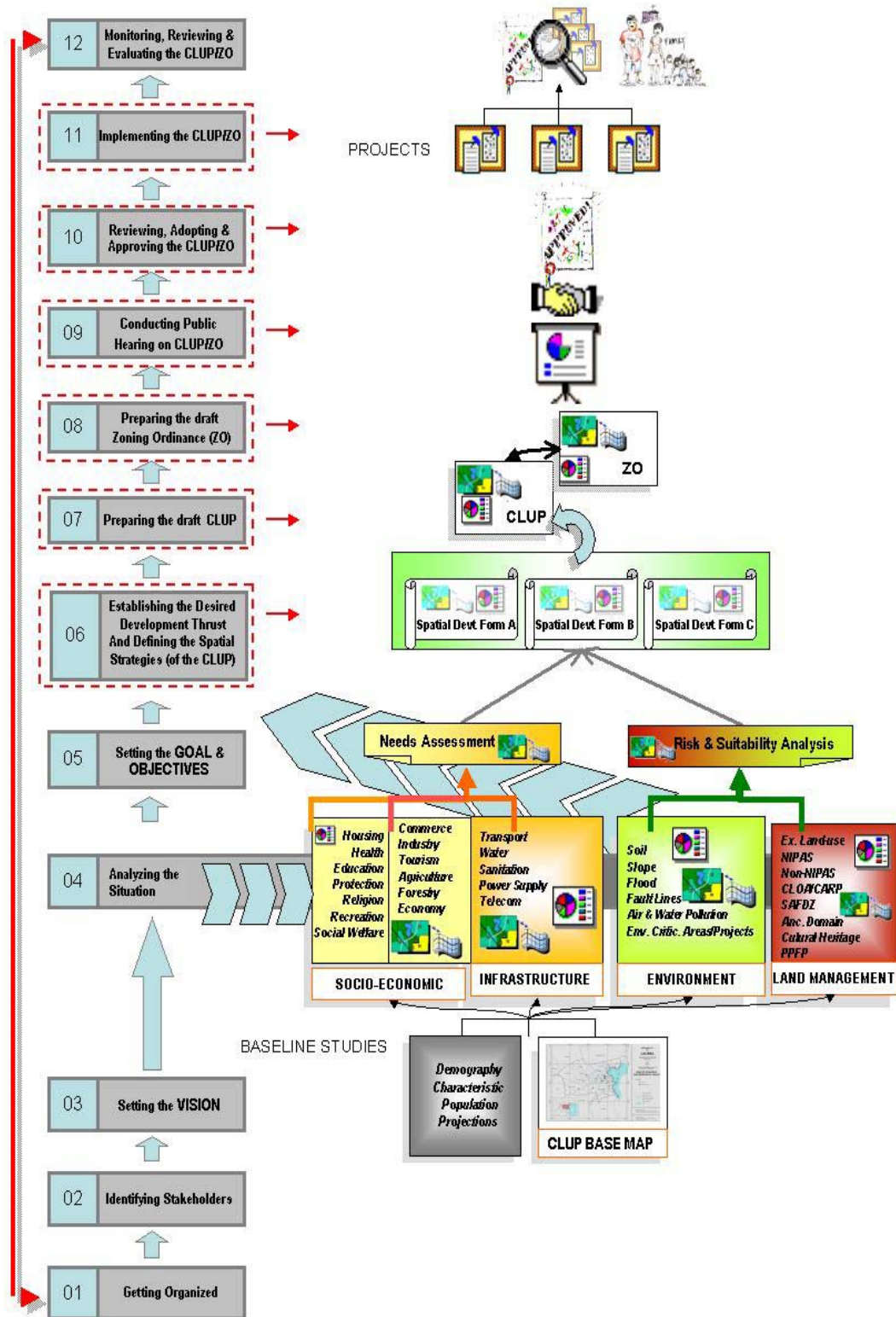
The combination of attribute and spatial data, which is a unique advantage of GIS, greatly facilitates the measurement of development outcomes and trends. For example, the tables and maps for development, clearances and permits will be excellent monitoring tools, that will provide useful inputs in analyzing land use changes, project implementation, and the attainment of the LGU's vision, goals and objectives.

As the GIS software is developing strongly into more user-friendly interface it will also be easier to meet a growing demand for 'political transparency' and participatory planning.

The information products in this step are the decision maps, charts and figures reflecting status of projects.

Summary

The following graph summarizes the interaction between the Planning Steps and the Information Products:



1.05.03 Preparing a CLUP Work Plan

A Project Management Software is useful in preparing the CLUP Work Plan in Step 1. A useful software of this kind is Microsoft’s MS Project, which helps the planner to align the planning activities with the available resources, and set milestones and deadlines for better management and results. By using its flexible reporting and analysis capabilities, the planner is assured of operational information to optimize resources, prioritize work, and align the CLUP planning with overall objectives. The following is a sample outline of Steps 1 to 4 in a Gantt chart using MS Project:

