

Case study: Cambodian National Institute of Statistics

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Summary*

The National Institute of Statistics (NIS), within the Ministry of Planning, is the focal point on statistical matters in Cambodia. The NIS compiles and consolidates statistics provided by decentralized offices and also collects primary data through household and establishment surveys and population, agricultural and economic censuses. Cambodia has a decentralized statistical structure. There are statistical bureaus and sections within Planning and Statistics departments of various Ministries and in planning and statistical units in the provinces and districts. The NIS contains 8 departments: (1). Statistics Policy and Cooperation, (2). Economic Statistics, (3). Social Statistics, (4). Demographic Statistics, Census and Survey, (5). Information Technology and Communication (ICT), (6). Statistics standard and Analysis, (7). National Account, (8). Sub-national statistics.

Metadata strategy

1. Introduction

The National Institute of Statistics (NIS), within the Ministry of Planning, is the focal point on statistical matters in Cambodia. The NIS compiles and consolidates statistics provided by decentralized offices and also collects primary data through household and establishment surveys and population, agricultural and economic censuses. Cambodia has a decentralized statistical structure. There are statistical bureaus and sections within Planning and Statistics departments of various Ministries and in planning and statistical units in the provinces and districts. The NIS contains 8 departments: (1). Statistics Policy and Cooperation, (2). Economic Statistics, (3). Social Statistics, (4). Demographic Statistics, Census and Survey, (5). Information Technology and Communication (ICT), (6). Statistics standard and Analysis, (7). National Account, (8). Sub-national statistics.

• Metadata strategy

The National Institute of Statistics (NIS), Ministry of Planning has created the CamInfo project supported by UNICEF since 2003 by using DevInfo platform developed by United Nations. This project is mainly intended to collect the core indicators from Censuses and Surveys result and some indicators from line ministries and CamInfo team inputs these indicators into CamInfo system. CensusInfo is yet another data base system similar to CamInfo but it is concerned with collection and dissemination of population and housing census data of countries at any geographical level. It is developed by the United Nations Statistical Division (UNSD), in association with UNFPA and UNICEF. The data of Cambodia included in this system relate to Demographic Survey, 1996, Cambodia Inter-censal Population Survey 2004, Population Census 2008 and Cambodia Inter-censal Population Survey 2013. The metadata of indicators include elements such as definition, time of data collection, nominator, denominator, source and data frequency, responsible agency and reference. NADA is the one data archive inside the NIS website responsible by Information Communication and Technology Department since 2010 supported by Accelerated Data Program (ADP). The main purpose of NADA is to keep all documents from the Censuses and Surveys reports in .pdf file format and describe the metadata of these reports as in CamInfo but in more details than CamInfo. Other tool such as TRS, Redatam, and CPF are the database classification and it integrates metadata and provides possibilities for metadata driven production. The metadata of indicators is handled by several statistics unit in line ministries and NIS. Classification and documentation is by CamInfo team of NIS, CensusInfo team and ICT department of NIS. The metadata development is the one strategy to reduce confusion of data users in using data from many sources and to standardize the data to enable comparison at global level. In the future, the line ministries should develop the metadata of indicators before sending to National Institute of Statistics, Ministry of Planning.

Current situation

Implemented and ongoing

A brief description of the data systems/software currently implemented by NIS is given below:

CamInfo system is the tool for producing table, graph and map. It contains many indicators from various sectors. It has been implemented since 2003 and is supported by UNICEF.

CensusInfo is the tool for producing table, graph and map. It contains demographic indicators from the population Census and Inter-censal Population Survey. It has been implemented since 2012 with UNFPA support,

NADA is data repository from census and survey and it has been implemented since 2010.

Redatam+SP is a software package developed by CELADE and the United Nations Population Division for Latin America and the Caribbean, based in Santiago, Chile. It allows data users to access censuses and other database sources very easily, quickly, and for any geographical area.

The Community Profile System (CPS) was developed to provide easy access to a range of demographic and socio-economic indicators (mostly in terms of rates and ratios), together with a number of basic counts such as population by sex and five-year age groups. These profiles can be generated for all geographical areas in the country, i.e. for all Villages, the smallest geographic building block in the census hierarchy, as well as for Communes, Districts, Provinces and the Country itself.

The Table Retrieval System (TRS) was primarily developed to easily select, retrieve, display, print and copy the statistical tables from population census and survey data. It is intended as a tool for electronic data dissemination. TRS allows data users with no previous computer experience to examine tables and accompanying text which are stored in a computer readable format. For Cambodia Inter-censal Population Survey 2013, The CPS and TRS have combined together so that data users can retrieve data from them.

The map layer and database is the one product for data dissemination after releasing final results of Population Census 2008 and this product is intended for data users who have access to and are proficient with GIS software packages. It consists of a series of map layers and associated databases with aggregated counts, ratios, and rates.

Metadata Classification

National Institute of Statistics (NIS), Ministry of Planning have used metadata format in CamInfo and CensusInfo format and NADA repository located in NIS website. This database software has been developed with the cooperation of the UN system. The product has been adapted from UNICEF ChildInfo technology. The NADA is a web-based repository system on the survey data generated by the National Institute of Statistics (NIS) of Ministry of Planning in Cambodia. It was developed to preserve, systematically store and retrieve statistical data including records on their methodology, concepts and other metadata.

The NIS has also produced Cambodia Standard Industrial Classification (CSIS) 5 digits in 2012. This publication represents a major step forward in Cambodia's effort to develop its own national CSIC, consistent with the four-digit classification from the United Nations (ISIC. Rev4).

Metadata system(s)

The metadata system developed in NIS has CamInfo, CensusInfo, and NADA repository located in NIS website. Other tools such as Redatam+SP, TRS, CPS and Map layer database also contain the metadata but these tools were used for census and CIPS data dissemination.

Costs and Benefits

The cost for building the metadata system is based on the project separately such as CamInfo supported by UNICEF, CensusInfo supported by UNFPA, NADA supported by the Accelerated Data Program (ADP) and other tools for census and CIPS data dissemination located in the Population Census and CIPS project. One of the major benefits for data users from this system is that, there is no confusion for using data by off-line and online.

Implementation strategy

As the metadata system is supported by donors there is a constraint that in the future donors may not support any more. So, NIS will have to seek the budget from Royal Government of Cambodia to maintain these activities.

IT Architecture

The IT architecture at National Institute of Statistics, Ministry of Planning has designed system separately based on project such as Socio-economic Survey, Population Census and Cambodia Inter-censal Population Survey, Economic Census and Agriculture Census etc. However, IT architecture at NIS needs to provide good quality data to data users through off-line and on-line and possibly that focus on:

- Consistency, structured and well documented data warehouse(s)
- Minimize duplicate data
- Support process oriented production
- Support efficient data collection
- Support flexible dissemination.

Metadata Management Tools

The CamInfo and CensusInfo database system are the tools that contain metadata adopted from DevInfo and data users can access by internet and off-line. The NADA repository also contains the metadata that users can download document and description of metadata through NIS website (www.nis.gov.kh).

Standards and formats

The CamInfo and CensusInfo database system is followed by DevInfo template format developed with the cooperation of the UN system and NADA repository template.

Version control and revisions

The CamInfo has been updated from version 1.0 to version 4.2 and CensusInfo is also updated from version 1.0 to version 2.0 while NADA version 4.1 was created. All the metadata in the CamInfo, CensusInfo and NADA have described the methodology for census and survey including the reference time of census and survey operation period.

Outsourcing versus in-house development

All metadata systems are developed by National Institute of Statistics, Ministry of Planning and financial and technical support from development partners. Outsourcing has not been done.

Sharing software components of tools

The National Institute of Statistics, Ministry of Planning has shared the CamInfo, CensusInfo and Census tools with data users through workshop at national and sub-national levels, in English and Khmer versions for CamInfo. The data user can download information from NADA repository in NIS website (www.nis.gov.kh) in English version. The data user service center located in National Institute of Statistics, Ministry of Planning can provide the data from censuses and survey based on data users' request.

Overview of roles and responsibilities

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The National Statistical System in Cambodia is highly decentralized. The central institution in the National Statistical System is the NIS at Ministry of Planning. According to the Statistics Law, the NIS is the official national statistical institution of the Royal Government of Cambodia, with the responsibility for establishing, leading and coordinating an integrated national statistical system which covers all designated official statistics and statistical units within ministries and government institutions. In addition to the NIS, each ministry and other government institutions have a statistics unit responsible for producing statistics. Various ministries and other institutions collect and produce statistics as part of their work. The system consists of NIS and 28 line ministries, government institutions and National Bank of Cambodia, as well as all producers of designated official statistics. The statistical database has been developed by NIS through data of census and surveys conducted by NIS and consolidating the statistical data produced by line ministries in one database.

Metadata management team

There are three teams for metadata management based on the project under NIS management such as CamInfo team, CensusInfo team and NADA team.

Training and knowledge management

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Partnerships and cooperation

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Other issues

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Lessons learned

The staff members who are involved in these works have received training from experts and actual practice from the beginning. However, the training is still required based on new technology update.

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Attachments