

NUTRITION DATA MAPPING IN LAO PDR



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NUTRITION DATA MAPPING IN LAO PDR

Centre for Development Policy Research
Ministry of Planning and Investment
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List of abbreviations

ASEAN	Association of South East Asian Nations
CDR	Centre for Development Policy Research
EMIS	Education Management Information System
ISO	International Organization for Standardization
KOICA	Korea International Cooperation Agency
LaoInfo	Devinfo based Information System for Lao PDR
LDC	Least Development Country
LESMIS	Lao Education and Sports Management Information System
LSB	Lao Statistics Bureau
LSIS	Lao Social Indicator Survey
MDG	Millennium Development Goals
MAF	Ministry of Agriculture and Forestry
MPI	Ministry of Planning and Investment
MOES	Ministry of Education and Sports
MOH	Ministry of Health
NAIS	National Agri- Food Statistics System
NSA	Nutrition Sensitive Agriculture Information System
NIER	National Institute for Economic Research
NIPN	National Information Platform for Nutrition
NNC	National Nutrition Centre
NSS	Nutrition Surveillance System
NSDS	National Strategies for the Developments of Statistics
NSEDP	National Socio-Economic Development Plan
SDG	Sustainable Development Goals
SDMX	Statistical Data and Metadata eXchange
UNICEF	United Nations Children's Fund

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- ✓ Ministry of Health
- ✓ Centre of Nutrition, Ministry of Health
- ✓ Ministry of Education and Sports
- ✓ Ministry of Agriculture and Forestry
- ✓ Lao Statistics Bureau

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Executive Summary

The main objective of Data Mapping is to identify nutrition related data and indicators collected routinely by the different sectors and existing in information platforms such as DHIS 2, EMIS, LaoInfo and others. Data Mapping was conducted by Data Analysis Unit within framework of NIPN initiative in Lao PDR.

Methodology for Data Mapping was developed jointly by Data Analysis Unit and key stakeholders. Methodology was broadly discussed among stakeholder and agreed. It consists of stakeholder consultations, desk review, key informant and expert interviews, focus group discussion. In the consultation with key stakeholders, the agencies representing NIPN Steering Committee were selected for Data Mapping: Ministry of Health, Ministry of Education and Sports, Ministry of Agriculture and Forestry, Lao Statistics Bureau.

Data Analysis Unit collected the information about the indicators, datasets and information systems in agencies based on prepared questionnaire during the key informant and expert interviews, focus group discussions. Data Analysis Unit provided the analysis of indicators and availability of full information about the indicators such as definitions, sources, periodicity of collection and administrative level. The nutrition specific and sensitive indicators were selected jointly by Data Analysis Unit and National Nutrition Centre. The latter developed criteria and led the selection process.

The followings are the main results of Data Mapping:

- Indicators collected routinely by the different agencies and existing in the datasets and information systems identified. Existing datasets and information systems in agencies identified. Information was collected on attributes of indicators definition, frequency of data collection, administrative level, organizations responsible for data collection and data management. All collected information compiled into one dataset. The total number of indicators is 4381.
- Nutrition specific and nutrition sensitive indicators identified based on the criteria developed by National Nutrition Centre. The numbers of nutrition specific and nutrition sensitive indicators are accordingly 233 and 1,308. Based on observations and analysis the following recommendations were suggested:
 - Harmonize information management systems by developing centralized information system in the respective.
 - Introduce the data quality standards such as SDMX or other for metadata, storing, processing and exchange of data in agencies.
 - Data audit to archive data that are not useful to free space and make the information systems more user.

The Data Mapping activity strengthened the partnership and coordination among the NIPN stakeholders. The results of the Data Mapping and information collected provide the foundation for building data repository and online dashboard. The results will be used for planning the nutrition related analysis in Lao PDR as well.

1.0 Introduction

1.1 Nutrition as a development priority in Lao PDR

The high prevalence of under-nutrition remains a major challenge in Lao PDR. Despite impressive economic growth over the past decade, the country has one of the highest rates of chronic malnutrition in South East Asia (Chapparo et al, 2014). Under-nutrition threatens lives and national socio-economic development. Under-nutrition may cause permanent damage to a child's brain, especially in the first two years of his/her life and decrease a child's activity levels, social interactions and cognitive functioning (Black RE et al, 2008). It's associated with reduced school enrolment, poses a challenge to the attainment of education targets, and has an impact on overall development of a country (Victora et al, 2008).

Lao PDR has over the years prioritized nutrition as a development issue and has been active at the global stage through the Scaling Up Nutrition Movement since 2011. Through the concerted efforts of multiple stakeholders, stunting which is the result of chronic under-nutrition reduced from 44 percent in 2011 to 33 percent in 2017 (LSIS 2). In spite of this significant progress, there exists wide disparity of levels of stunting and intensity of child deprivations across the country, with poor and rural areas most affected. Malnutrition leads to enormous economic and human costs globally. Data from the Lao Social Indicator Survey (LSIS 2) 2017 suggests that more than 350 thousand Lao children suffer from some form of malnutrition – and, therefore, cannot achieve their full growth and development potential. Every year, approximately US\$435 million or 2.4% of GDP is lost due to under-nutrition (NIER, 2013). Optimal nutrition remains key in realizing the Least Development Country graduation ambition and realization of SDG 2 in Lao PDR (LDC graduation assessment report, 2019).

In response to the high level of malnutrition, the Government of the Lao PDR promulgated the first National Nutrition Policy in December 2008. Based on this policy, the first National Nutrition Strategy and Plan of Action (2010-2015) was formulated by the Government of the Lao PDR. It was the first multi-sectoral framework providing the direction for all those who should be critically involved in addressing under-nutrition. The updated National Nutrition Strategy to 2025 and Plan of Action to 2020 aimed to strengthen the multi-sectoral approach to nutrition and more explicitly, define the interventions, approaches and institutional arrangements for achieving a more comprehensive action using a multi-sectoral convergent approach. The National Nutrition Strategy to 2025 and Plan of Action to 2020 build on the previous experiences and opportunities and receive important commitment and participation from many domestic sectors and development partners.

1.2 National Information Platforms in Lao PDR

National nutrition information systems are essential for assessing the current status and measuring changes in nutritional status of populations, tracking the progress of actions and prioritising efforts toward improving nutrition. An accurate assessment of the nutrition situation allows governments and their development partners to make evidence-based decisions with regards to nutrition policy and program development. Nutrition information is useful for advocacy, planning, budgeting, program design, as well as monitoring and evaluation.

The National Information Platforms for Nutrition (NIPN) is an international initiative of the European Commission with support from the United Kingdom Department for International Development and the Bill and Melinda Gates Foundation. This initiative is an integral part of the Government's nutrition programme, which is implemented jointly by European Union Delegation and UNICEF in the context of their Partnership for Improved Nutrition in the Lao PDR in support of the National Nutrition Strategy and Plan of Action 2016-2020.

Comprehensive data generated from the NIPN is expected to contribute to the National Nutrition Committee's Annual Progress Report on the implementation of the National Nutrition Strategy to 2025 and Plan of Action to 2020; monitoring and progress reporting of the 8th National Socio-Economic Development Plan (NSEDPP); Sustainable Development Goals (SDGs) and Scaling Up Nutrition (SUN) movement. Knowledge products will feed into nutrition-related policy dialogue and advocacy such as the National Nutrition Forums, Round Table Meetings and sectoral review meetings.

The overall objective of the National Information Platform for Nutrition initiative is to contribute to the global reduction of stunting (chronic under-nutrition) in alignment with the World Health Assembly 2025 targets. Specifically, NIPN aims to build institutional capacity both at national and sub-national levels to manage, analyse information and data related to nutrition, to track progress, disseminate and use information for informed policies and strategic decisions.

2.0 Data Mapping in NIPN

The data mapping exercise provides an overview of the availability, accessibility and quality of nutrition related data that are of interest to the NIPN. It maps out the sources of data of key sectors that contribute to the implementation of the National Nutrition Strategy (2016-2030) and Plan of Action (2016-2025) and provides foundation for defining the principles of sharing and using data among agencies involved to NIPN.

The data mapping exercise builds on the work of a country assessment of nutrition-related information management systems in 2018. The assessment focused on information systems their system design and architecture, technology platform, infrastructure, data security and access, user interface and external system integration.

The nutrition data mapping exercise focused on the indicators routinely collected and used in the agencies; attributes of the indicators; information systems for data storage and data disseminations; as well as classifications of indicators used in agencies.

2.1 Objectives

The objectives of the nutrition data mapping are as follows:

- To map data routinely collected by the different sectors and published in existing sectoral information platforms such as DHIS 2, EMIS, LaoInfo and others.
- To collect information on attributes of indicators: definition, frequency of data collection, administrative level of reporting, organizations responsible for data collection and data management.
- To review the classification of indicators in agencies' datasets and information systems for data storage and dissemination.
- To identify datasets that are not captured in the routine information systems of agencies.

2.2 Methodology

The nutrition data mapping exercise used mixed methods of data collection which enriched the analysis.

- **Stakeholder consultations:** The Data Analysis Unit had in depth discussions and consultations with UNICEF, GSF and agencies involved in the NIPN initiative in Lao PDR. The discussions and consultations contributed to the development of methodology, identification of objectives, the selection of agencies for Data Mapping, preparation of concept, questionnaire and structure of the report.
- **Desk review:** Key documents, literature and other materials related to nutrition situation in Lao PDR, NIPN initiative, data mapping experiences in other NIPN countries, laws related to data and statistics in Lao PDR were reviewed. This informed the structure of the questionnaire scope of the mapping exercise as well as data collection.

- **Key informant and expert interviews.** The Data Analysis Unit visited agencies and collected information according to the questionnaire. Key persons from the government agencies with responsibility for data were interviewed: particularly Director of Nutrition Centre, Director of Planning and Investment Division of Ministry of Health (MOH), Deputy Director General of Planning Department of Ministry of Education and Sports (MOES), Director General of Education Sport Statistics Centre of MOES, Director of Centre for Agricultural Statistics of Ministry of Agriculture (MAF), Director General of Social Statistic Department of LSB, Deputy Director of Social Statistic Department of LSB. During the interviews the agencies were introduced to the purpose and objectives of data mapping activity and were requested to provide the list of indicators collected through established routine system highlighting the source, level and periodicity of collection. The list of surveys together with report and questionnaire used were also shared.
- **Focus group discussions:** The Data Analysis Unit had focus group discussions with technical staff of the selected sectors to collect and clarify information about some data that were shared, information systems and routine data used by the agencies. Particularly, the team met with DHIS2 team of MOH, technical staff from National Nutrition Centre of MOH, Deputy of Head of Education and Sports Statistic and Mapping Section of MOES, technical officers of Centre for Agricultural Statistic of MAF.

2.3 Scope of nutrition data mapping exercise

In the consultation with key stakeholders, the following ministries and departments that are members of the NIPN Steering Committee were identified for the nutrition data mapping exercise:

1. Lao Statistics Bureau
2. Ministry of Education and Sports
3. Ministry of Agriculture and Forestry
4. Ministry of Health

The selected ministries and departments are also part of the National Nutrition Committee (NNC) that oversees the implementation of the National Nutrition Strategy (2016-2030) and Plan of Action (2016-2025) in Lao PDR.

2.4 Limitations

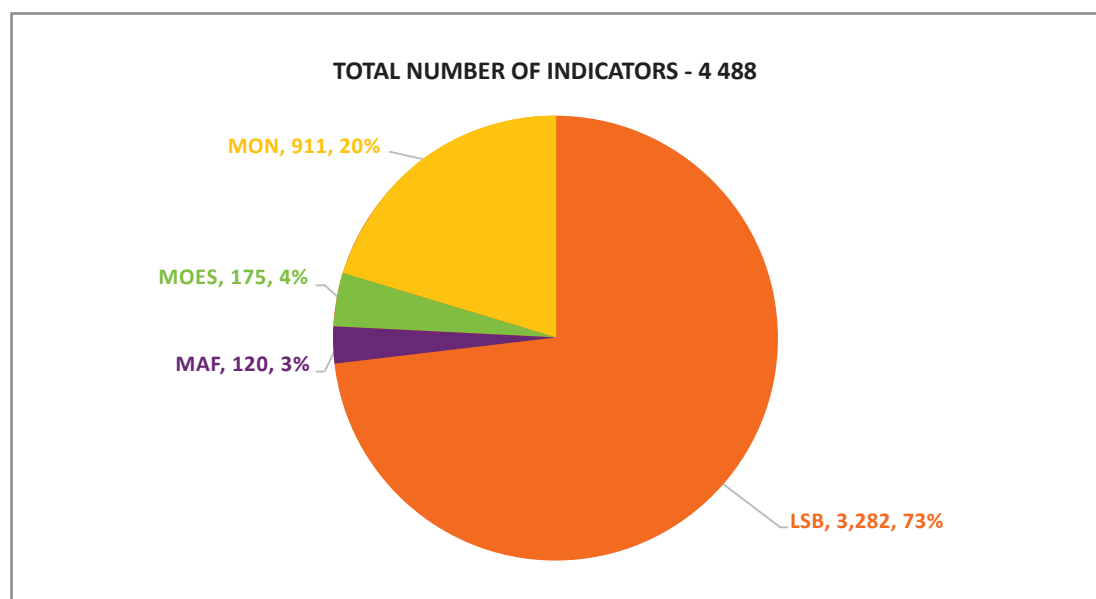
Considering that the data mapping exercise focused on 4 key ministries and departments, there are a number of information systems that were not added to this assessment that could provide useful source of information for nutrition.

3.0 Nutrition data mapping in Lao PDR

3.1 Indicators provided by agencies

As part of the data mapping exercise, the selected ministries and departments shared the list of indicators that are regularly collected. The definition of indicators and data formats used for storing as well as exchanging data and indicators. A total of 4488 list of indicators were shared by the ministries and departments. Graph 1 illustrates the number of indicators provided by agencies.

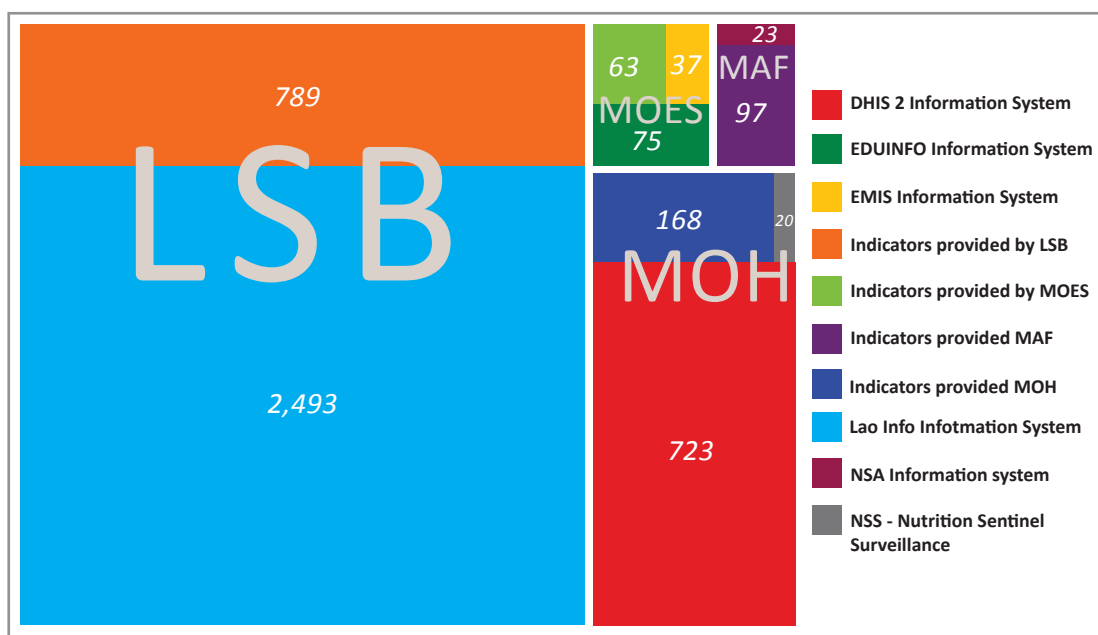
Graph 1. The number of indicators provided by agencies



They include list of indicators collected through established routine information systems, such as DHIS 2 and EMIS as well as data disseminations such as LaoInfo, EDUINFO and others. Also, the organizations shared list of indicators that are outside the routine information systems that are captured and stored through other means.

Graph 2 illustrates the number of indicators aggregated by the datasets provided by agencies and the Information Systems used in agencies.

Graph 2. The number of indicators by datasets and agencies



3. 2 Overlapping indicators in datasets

The review of the data provided by agencies revealed that there were cases of overlapping indicators in the datasets provided by agencies. The full lists of overlapping indicators in different datasets are given in the Annex 2 of this report.

Table 1 shows the number of overlapping indicators in the list of indicators and information systems provided by MOH. The analysis showed that 14 indicators provided by Division of Planning and Investment of MOH overlapped with indicators in DHIS 2. Also 3 indicators of the National Surveillance System (NSS) overlap with that of the provided by Division of Planning and Investment of MOH. There are overlapping indicators in the other pairs of the list of indicators:

Tables 1. The number of overlapping indicators in the list of indicators and information systems provided by Ministry of Health

	DHIS 2	Other MOH Indicators*	NSS
DHIS 2	0	14	1
Other MOH Indicators	14	2	3
NSS	1	3	0

*Used in health planning and management

Table 2 illustrates the number of overlapping indicators in the list of indicators and information systems provided by MOES. As seen from table only one indicator from EDUINFO overlaps with the list of indicators provided by the Education and Sports Statistics Centre of MOES.

Tables 2. The number of overlapping indicators in the list of indicators and information systems provided by Ministry of Education and Sports

	EMIS	EDUINFO	*Other MOES Indicators
EMIS	1	0	0
EDUINFO	0	0	1
Indicators provided by Education and Sports Statistics Centre of MOES	0	1	0

** Provided by Education and Sports Statistics Centre of MOES*

Table 3 shows a summary of number of overlapping indicators in the various datasets and information systems.

As seen from table 3, there are 81 overlapping indicators in LaoInfo Information System. There are 6 overlapping indicators the LaoInfo and Indicators provided by the Department of Social Statistics of LSB.

Table 3. The number of overlapping indicators within the same dataset in the list of indicators provided by agencies and information systems in the selected ministries/ departments

The list of indicators and information systems	The number of overlapping indicators within the same dataset
DHIS 2	0
Indicators provided by Division of Planning and Investment of MOH	2
NSS	0
EMIS	1
EDUINFO	0
Indicators provided by Education and Sports Statistics Centre of MOES	0
LaolInfo	81
Indicators provided by Department of Social Statistics of LSB	6
Indicators provided by Statistics and Planning Divisions of MAF	1
NSA	1
Total	92

A total of 107 consolidated list of overlapping indicators was created from four ministries/departments. The consolidated list of overlapping indicators consisted of the indicators overlapping within the same dataset (92 indicators) and the indicators overlapping in the different datasets (15 indicators). The consolidated list of overlapping indicators was removed from the total list of indicators.

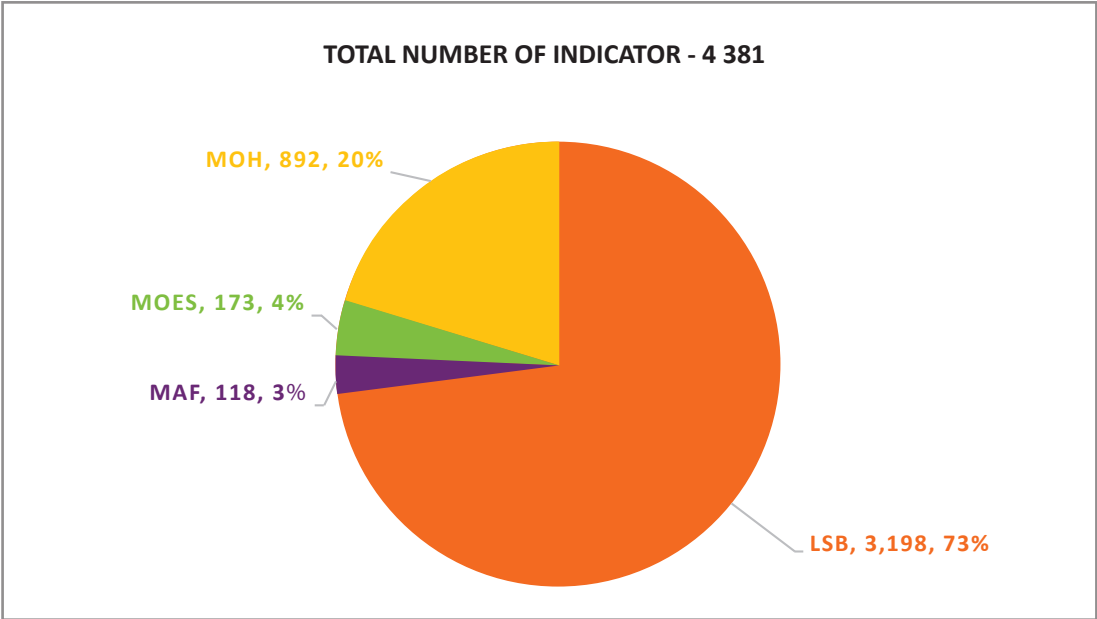
After removing the overlapping indicators, we obtained the final list of unique indicators. Total number indicators in the final list are 4381 (Table 4)

Table 4. Total number of indicators initially provided by agencies and after removing overlapping indicators

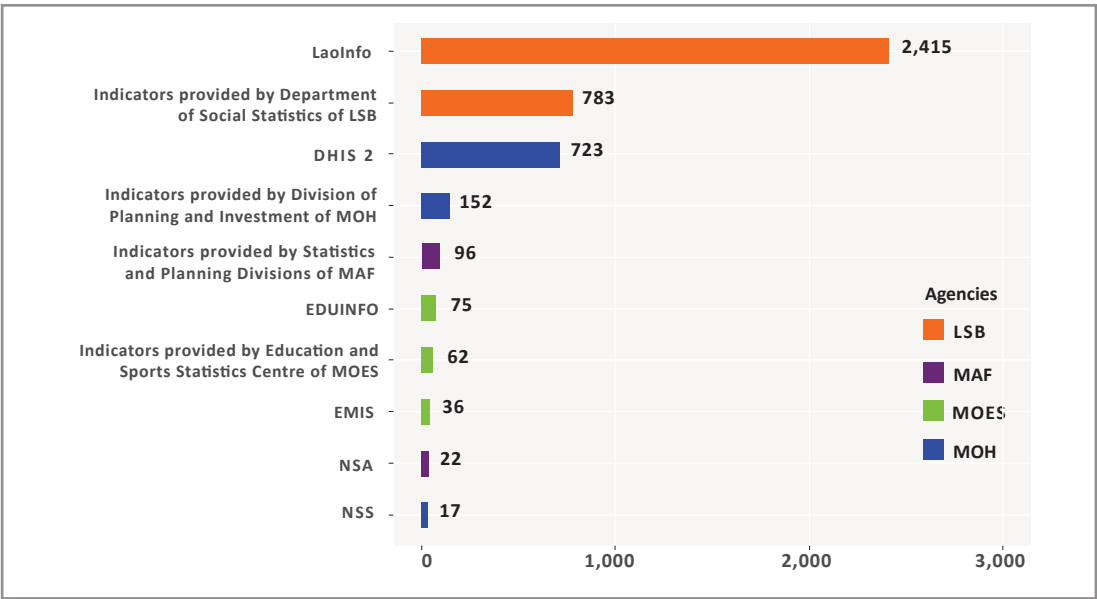
Total number of indicators provided by agencies	Total number of removed indicators	Total number of indicators after removing overlapping indicators
4,488	107	4,381

The final list of indicators aggregated by agencies and information systems shown in the Graph 3 and Graph 4.

Graph 3. The number of indicators provided by agencies after removing overlapping indicators



Graph 4. The number of indicators by datasets, information systems and by agencies, after removing overlapping indicators



From the data shared by the respective ministries and LSB, most of the datasets lacked indicator attributes such as definitions, geographic level of reporting, frequency of data collection among others. Table 5 shows the percentage of indicators with attributes.

Table 5. Percentage of indicators for which information on attributes provided by Agencies

Attributes	LSB	MAF	MOES	MOH
Definition of indicator	0.0%	20.3%	19.7%	98.0%
Geographic level	75.5%	100.0%	64.2%	91.6%
Frequency of data collection	32.6%	95.8%	64.2%	99.3%
Organization in charge of data collection	83.6%	100.0%	64.2%	100.0%
Organization in charge of data management	75.5%	100.0%	64.2%	83.0%

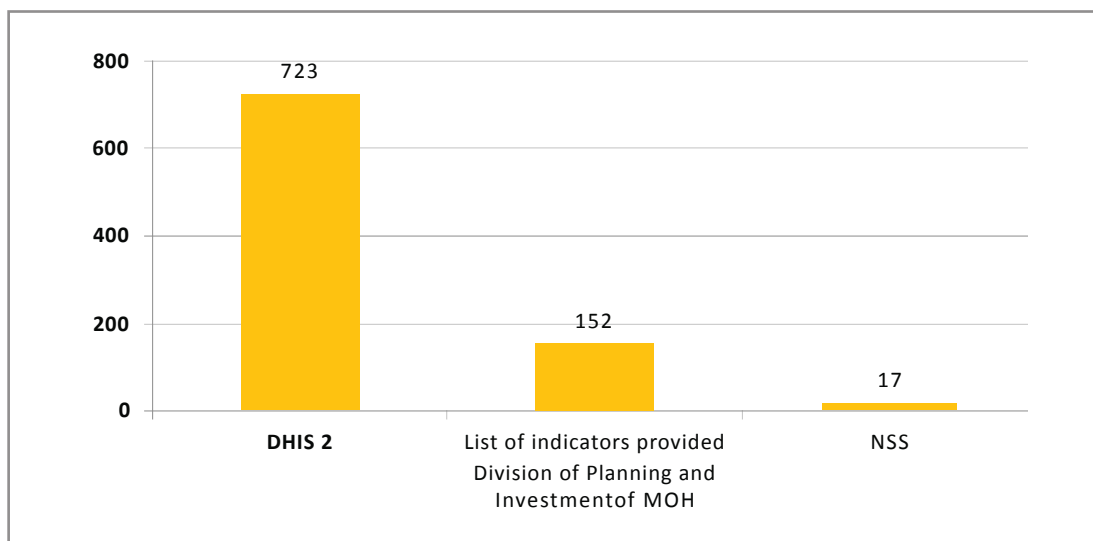
As seen from above table, no definitions of indicators were provided by LSB. MAF and MOES provided definitions for 20.3 and 19.7 percent indicators. LSB provided least information on frequency of data collection. Full information on geographical level was provided only by MAF. Information on organizations in charge of data collection was fully provided by MAF and MOH.

3.3 Assessment of sectoral information management systems

3.3.1 Ministry of Health

The nutrition related datasets of the MOH could be categorized into two: a set of indicators captured in the routine information management system (DHIS2) and non-DHIS2 indicators. Division of Health Information of Ministry of Health, Division of Planning and Investment of Ministry of Health and National Nutrition Centre provided a total of 892 indicators (excludes overlapping indicators) for the sector.

Graph 5. The number of indicators in the dataset and information systems provided by MOH



DHIS 2 is the main information system for collecting, storing data and reporting in MOH. The platform provides a data warehouse that collects and manages routine data from all public health facilities at province and district level for dissemination and use of information. DHIS2 was established in December 2016 and managed by Department of Planning and Cooperation, Ministry of Health with the assistance of the development partners such as: the World Bank, UNICEF, Lux-Development, Oslo University and others.

District Health Information Software (DHIS2) is a web-based open source health information system that is used in many countries for managing health information data. The system provides functionality to generate the national health system reports, statistics reports as well as other reports serving monitoring purposes for the Ministry of Health and the Government of Lao PDR. The data for DHIS 2 are mainly collected from the health facilities in provinces and districts.

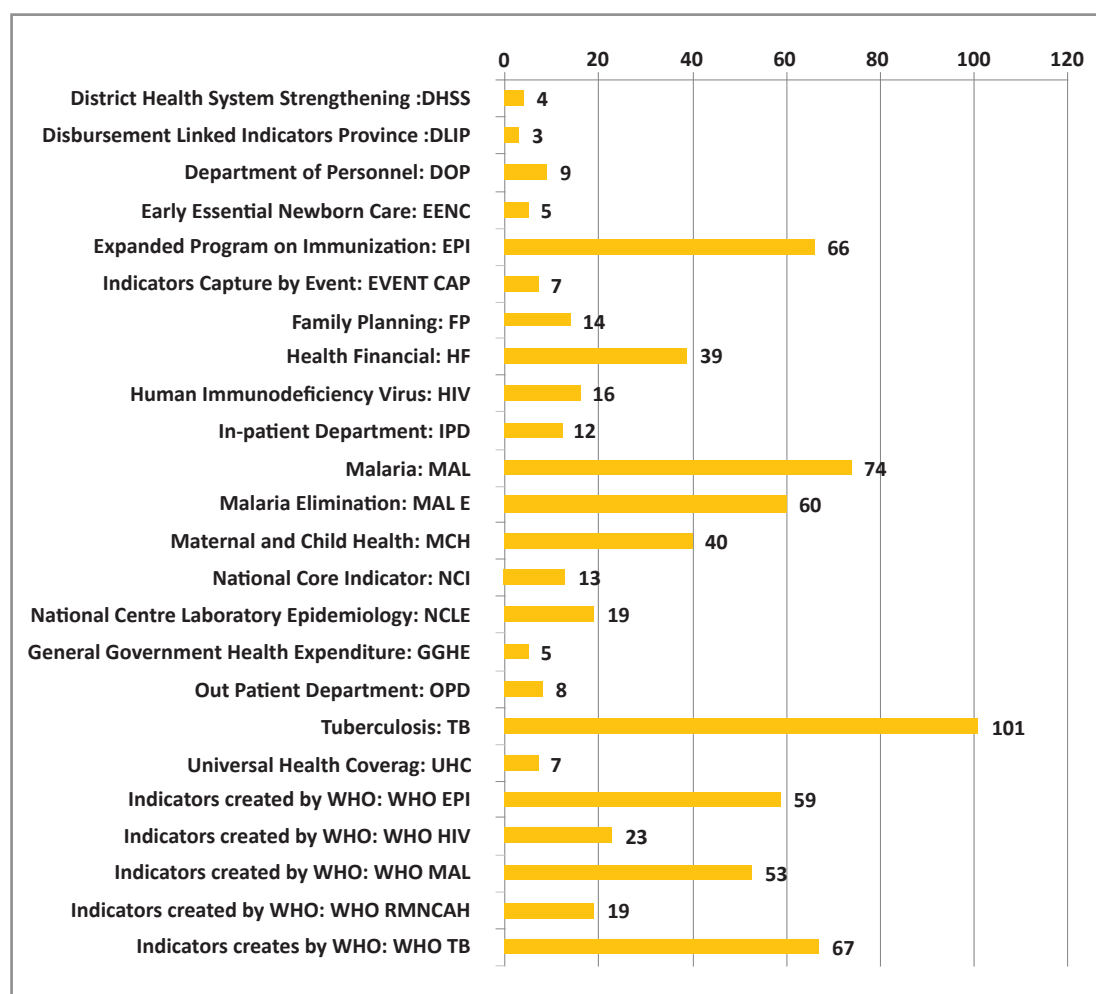
DHIS 2 is used to routinely collect information on maternal and child health, vaccination, health infrastructure and hospital patient flows, population served under each of the health facilities. It enhances and strengthens the data collection, reporting, processing and analysing. DHIS 2 provides easy access for all health managers nationwide and development partners to information related to health. The effectiveness of DHIS2 system depends on the users at the district and provincial levels that are responsible for managing the data and are the primary users. At present, there are about 900 people from 18 provinces, 147 districts and central hospitals, including police and military hospitals that have been trained for data entry into DHIS 2 system.

Information obtained from DHIS 2 supports decision making, development of health policies and interventions, governance, health research, human resource development in health, health education, training of health workers in area where shortages has impacted health service delivery in the country.

The DHIS 2 has user friendly interface and has capability of data retrieval using multiple attributes of indicators such as geographical level, time period and thematic areas. The right to access data is controlled by administrator at central level, thus assuring the data security of the system. The DHIS 2 has the capability to save the data to local host computer and keep back- up copies of the data. The Department of Planning and Cooperation of MOH is the main department that manage the DHIS2 system together with other departments and centres.

Total number of indicators in DHIS 2 is 723. The indicators are classified by thematic areas. (Graph 6).

Graph 6. Indicators classification in DHIS 2



The indicators used for planning and not included to DHIS 2:

The Division of Planning and Investment of Ministry of Health provided a list of 168 indicators that are mainly used for health planning and management. After accounting for overlapping indicators, with DHIS 2, the number of indicators reduced to 152.

Indicators from Nutrition Surveillance System:

National Nutrition Center uses the data obtained from DHIS 2 and data from Nutrition Sentinel Surveillance in monitoring nutrition outcomes. The non-DHIS2 indicators are mainly stored in Microsoft excel format on office computers. The Nutrition Sentinel Surveillance continuously assesses the food and nutrition status in key defined sentinel sites spread along all the 18 provinces of Lao PDR. It focuses on the food and nutrition status of women and children under 2 years, WASH, Child Health and food security. National Nutrition Sentinel Surveillance is conducted twice a year. After accounting for the overlapping indicators, the numbers of indicators provided by National Nutrition Center are 17. These indicators are obtained from Nutrition Sentinel Surveillance.

Table 6. Percentage of indicators for which information on attributes provided by MOH

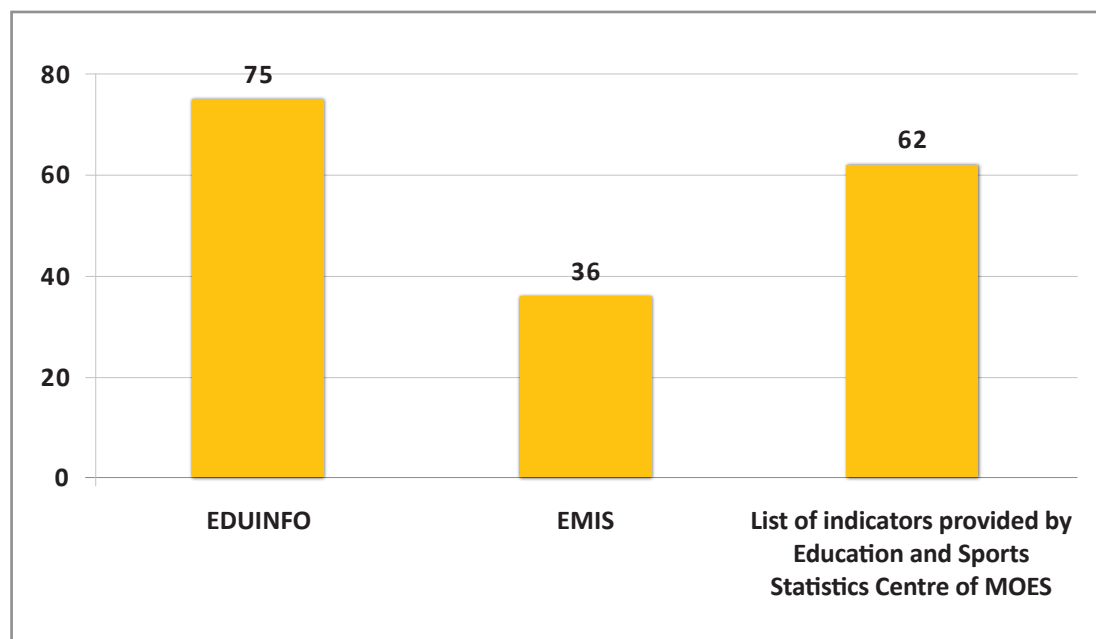
Attributes of indicators	DHIS 2	Other MOH Indicators	NSS
Definition of indicator	100.0	99.3	0.0
Geographic level	100.0	50.7	100.0
Frequency of data collection	100.0	96.1	100.0
Organization in charge of data collection	100.0	100.0	100.0
Organization in charge of data management	100.0	0.0	100.0

As seen from the table 6, attribute information for some dataset of MOH indicators are not provided fully.

3.3.2 Ministry of Education and Sports

Education and Sports Statistics Centre operates under the Department of Planning and collects data related to education and sports indicators. An Education and Sports Statistics Centre collects data by two methods, one is the education statistics report from different provinces which are generated by the EMIS and the other one is through surveys that are conducted periodically. An Education and Sports Statistics Centre stores data in different format including: excel sheet, and oracle database. Education and Sports Statistics Centre of Ministry of Education and Sports provided 173 indicators that are used in measuring education outcomes.

Graph 7. The number of indicators in the dataset and information systems provided by MOES



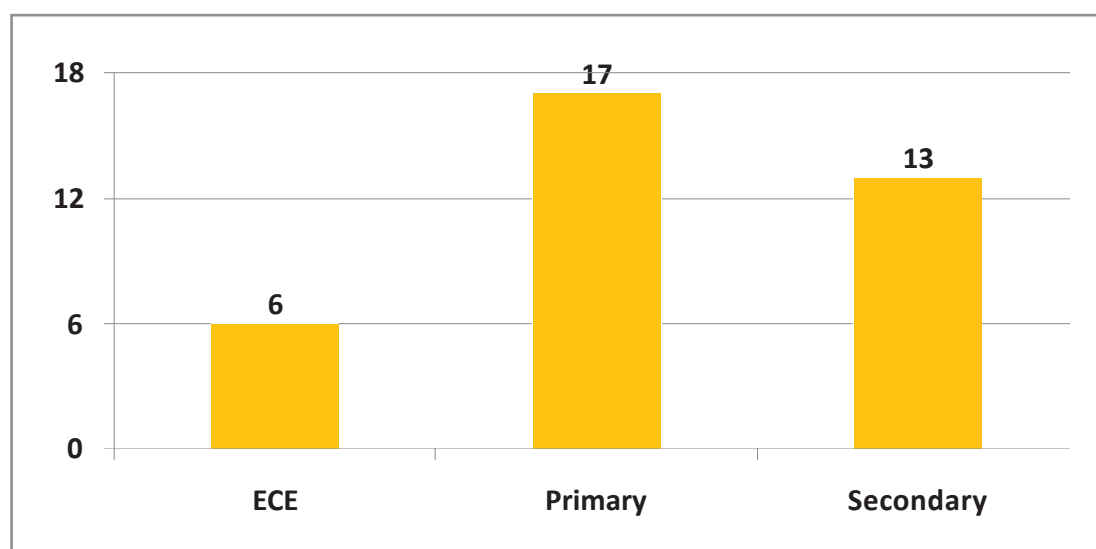
Ministry of Education and Sports has several Education Information Management Systems such as;

- ✓ EMIS,
- ✓ EDUINFO,
- ✓ FMIS,
- ✓ TEMIS,
- ✓ TVET-MIS,
- ✓ LUMIS and others.

The information systems can be accessed online and offline, however, it is not available for public access. Lao Education and Sports Management Information System (LESMIS) is a new information system that is currently under development. LESMIS aims at integrating all existing Education Information Systems in the education sector.

EMIS is main information system for primary, secondary and early childhood education. It is hosted under the Education Statistics and Information Technology Centre. Data for EMIS is collected in a hard copy format through the distribution of school census questionnaire and the generated data is entered by the District Education Departments. EMIS contains 36 indicators as shown by graph 8 below.

Graph 8. Indicators classification in EMIS and the number of indicators



The indicators used for planning and not included in EMIS: The Education and Sports Statistics Centre provided a list of 62 indicators that are routinely used for planning in MOES. The list includes the indicators on quality of education, expenditure on education and others.

EDUINFO is dissemination information system for sharing data in offline mode. EDUINFO is a Devinfo based information system designed to search or browse for data, visualize the data in tables, graphs and maps, and share (export) the data with others. EDUINFO contains 75 indicators. EDUINFO is currently inaccessible on the cloud due to system maintenance issue. The future plan of EDUINFO is under the discussion between MOES and LSB.

Table 7 provides information on attributes of indicators provided by MOES. As seen from the table 7, the information on definition of indicator provided only 5.6 % indicators for EMIS and 51.6 % indicators for the MOES dataset. No information on geographical level, frequency of data collection, organizations in charge of data collection and data management was provided for MOES dataset as well.

Table 7. Percentage of indicators for which information on attributes provided by MOES

Attributes of indicators	EDUINFO	EMIS	Other MOES indicators
Definition of indicator	0.0	5.6	51.6
Geographic level	100.0	100.0	0.0
Frequency of data collection	100.0	100.0	0.0
Organization in charge of data collection	100.0	100.0	0.0
Organization in charge of data management	100.0	100.0	0.0

3.3.3 Ministry of Agriculture and Forestry

The Centre for Statistics of Department of Planning and Cooperation of Ministry of Agriculture and Forestry provided a list of 118 indicators for the agricultural sector.

The Centre for Statistics of Department of Planning and cooperation of Ministry of Agriculture and Forestry collects data mainly using two sources: the administrative report from district up to the provincial level collected by the Centre of Statistics and surveys. The latter are conducted yearly or periodically such as agriculture census. These are mostly stored in excel format.

The Centre for Statistics of Department of Planning and cooperation of MAF provided two sets of indicators:

- **The list of indicators routinely collected within MAF** which contains 96 indicators. The list contains indicators on agriculture products, livestock, agriculture land areas, irrigated areas and others.
- **The list of indicators of Nutrition Sensitive Agriculture Information System.** The Nutrition Sensitive Agriculture (NSA) Information System is part of the main Information System in MAF, specifically built to manage the agriculture related nutrition sensitive indicators. The total number of indicators in NSA Information System is 22.

MAF has another information system, National Agri-Food Statistics System. It is used for collecting agriculture-food information from district level. The system is supported by KOICA (Korea International Cooperation Agency) in terms of internal server configuration and technical assistance. Most of the data are administrative data, and some are collected from surveys.

Graph 9. The number of indicators in the datasets provided by MAF

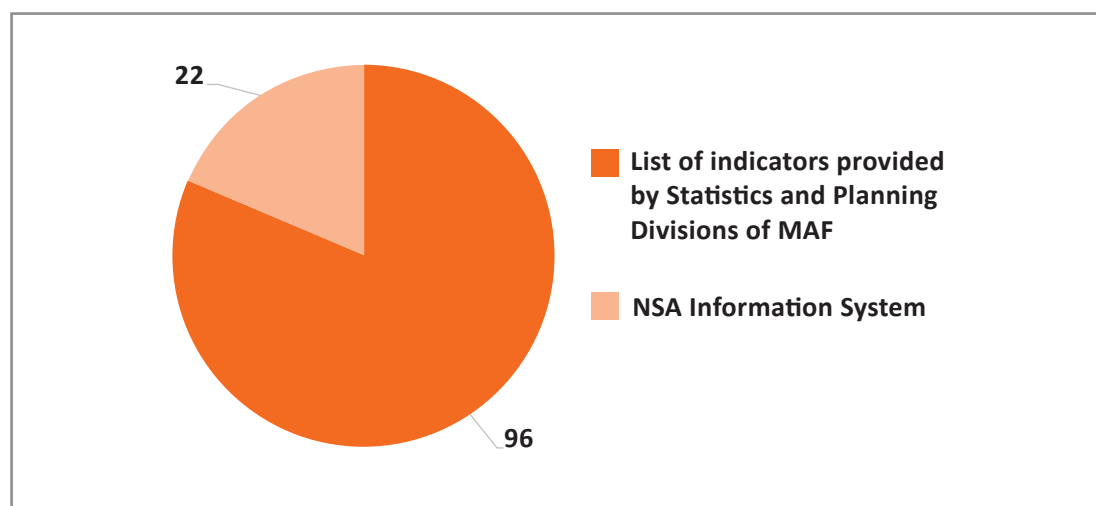


Table 8 provides information on attributes of indicators provided by MAF. As seen from the table 8, the definition of indicators are not provided by MAF for the most indicators.

Table 8. Percentage of indicators for which information on attributes provided by MAF

Attributes of indicators	Other MAF Indicators	NSA Information System
Definition of indicator	25.0	0.0
Geographic level	100.0	100.0
Frequency of data collection	94.8	100.0
Organization in charge of data collection	100.0	100.0
Organization in charge of data management	100.0	100.0

3.3.4 Lao Statistics Bureau

Lao Statistics Bureau has the status equal to sub-ministry, under the Ministry of Planning and Investment. LSB directs, manages and implements the statistics activities in the country. This includes production, dissemination of official statistics of the National Statistics activities. LSB collects data using two methods: obtaining data from administrative records and collecting data from surveys. Lao Statistics Bureau collects data on economic statistics, socio statistics, environment and natural resources statistics, security and stability statistics :

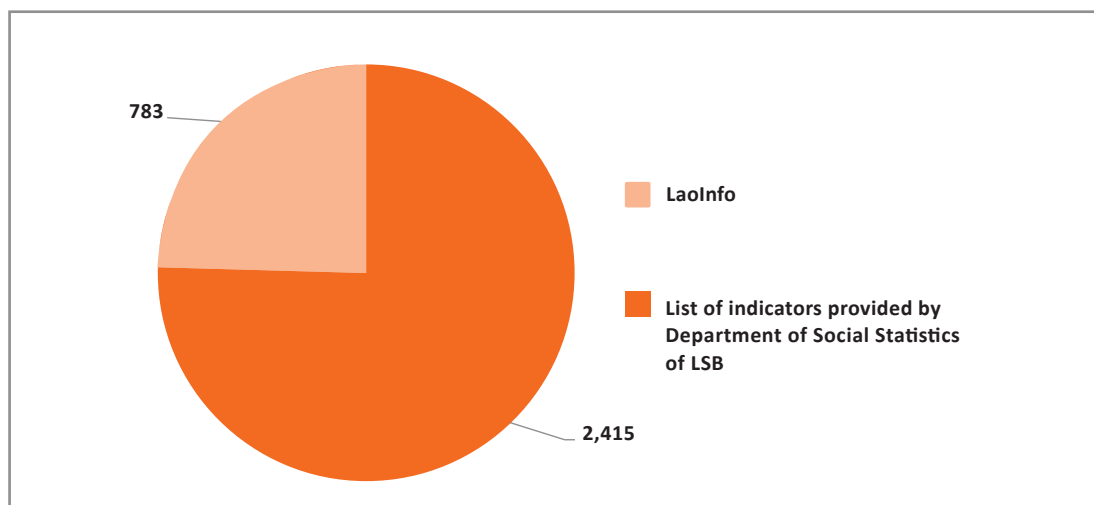
- Economic statistics reflects the activities of development in the areas of agriculture, forestry and fisheries, industry and handicraft, energy and mine, telecommunication and post, information technology, construction, commerce, monetary, banking and insurance, tourist, business registration and other statistics relating to economic subject matters.
- Socio statistics reflects the activities of development in the areas of the population, ethnicity, education, public health, labour, social welfare, information and culture, administrative unit registration, poverty, gender, social security, housing, sports and recreation, social organization, accident, crime and other statistics relating to socio subject matters.
- Environment and natural resources statistics reflects the activities of development in the areas of environment and natural resources on country's geography, mine, hydrology, topology, disaster, pollution, wastage and waste management to balance environment, natural resources, human and human development and other statistics relating to environment and natural resources subject matters.
- Security statistics reflects the situation in the area of national security

The total number of indicators provided by Lao Statistics Bureau is 3 282. After accounting for overlapping indicators, the total number indicators reduced to 3 198.

The indicators were provided by Department of Data Services of LSB (LaoInfo) and Department of Social Statistics of LSB (Graph 10)

¹ Statistics Law of Lao PDR.

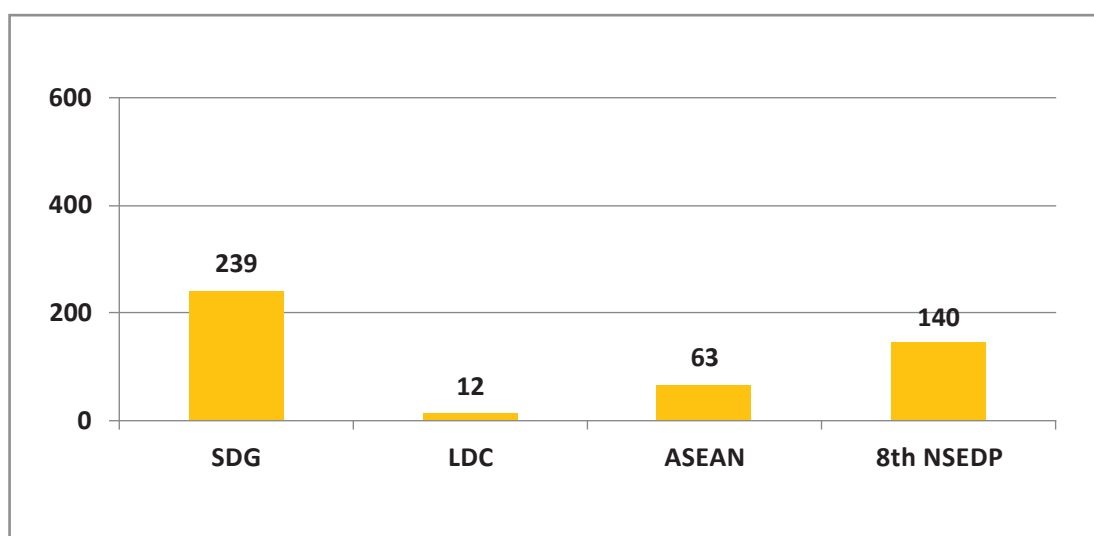
Graph 10. The number of indicators in LaoInfo and the list of indicators routinely collected by Department of Social Statistics



The Department of Social Statistics of LSB monitors other cross-sectoral indicators of national and international frameworks/development plans. These indicators are mostly drawn from institutional data and surveys. These include;

- Sustainable Development Goals related indicators – 239.
- Least Developed Countries related indicators – 12.
- Association of Southeast Asian Nations related indicators – 63
- 8th National Socio-Economic Development Plan related indicators – 140.

Graph 11. The number of indicators provided by LSB by Goals and Development Plans



Lao Statistics Bureau has two type of information System:

- ✓ Internal Information System for storing data and managing data in LSB
- ✓ Information System for data dissemination- Laoinfo

LaoInfo is a DevInfo based Information System containing data on key socio-economic indicators for Lao PDR. DevInfo is compliant with international statistical standards to support open access and widespread data exchange and operates both as a desktop as well as a web application.

LaoInfo consists of datasets that were disseminated at different periods of times and related to different development priorities and activities

Table 9. LaoInfo datasets and the last updated dates

Datasets based on Devinfo platform	Last updated date
Luangprabang Social Economic Database	29.05.2019
Laoinfo v6.1 National Socio-Economic_N_28_08_2015	01.12.2015
MDG_17_07_2014	04.11.2014
Lao PDR LSIS Database r1	18.09.2014
Food security database R2_v6.1	20.05.2013
Laoinfo v6.1 MDGinfo Database	27.06.2012
Laoinfo v6.1 LRHS	27.06.2012
Laoinfo v6.1 Population Census	29.03.2012
Laoinfo v6.1 Mics3_v6.1	27.03.2012

Graph 12 shows the number of indicators by LaoInfo datasets. Disseminated Laoinfo datasets covered Socio-Economic situation at national and provincial level, Millennium Development Goals, the results of MICS surveys for different periods, results of population census, food security and reproductive health.

Graph 12. Number of indicators by Laoinfo datasets

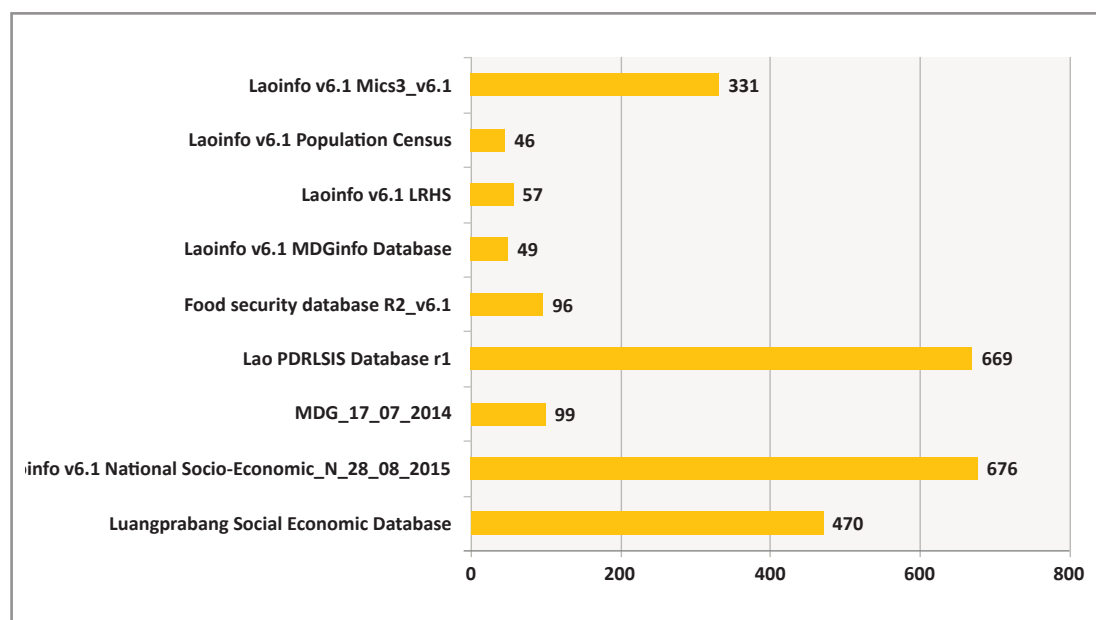


Table 10 shows the information on attributes of indicators provided by LSB. As seen from the table, the information on definition of indicator, data on geographical level, frequency of data collection, organizations in charge of data management not provided by Department of Social Statistics of LSB.

Table 10. Percentage of indicators for which information on attributes provided by LSB

Attributes of indicators	LaoInfo	Other LSB indicators
Definition of indicator	0.0	0.0
Geographic level	100.0	0.0
Frequency of data collection	43.1	0.0
Organization in charge of data collection	100.0	33.0
Organization in charge of data management	100.0	0.0

4.0 Nutrition specific and sensitive indicators

Nutrition indicators were identified among the list of indicators presented by the respective sectors. The identification of the nutrition indicators will facilitate timely analysis and responses to policy relevant questions that may arise as well as identify gaps in the results framework of the National Nutrition Strategy and Plan of Action (2016-2020). The process benefitted from the insights of specialists from the Nutrition Centre and staff of other departments.

4.1 The criteria for nutrition specific and sensitive indicators

The concept of nutrition-specific and nutrition-sensitive interventions is widely used for designing nutrition programs and interventions. The Lancet Conceptual Model on “Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?” (Black et al, Lancet 2013) was used as the basis for identifying the sectoral indicators into these broad categories. This conceptual model informed the NNSPA (2016-2020).

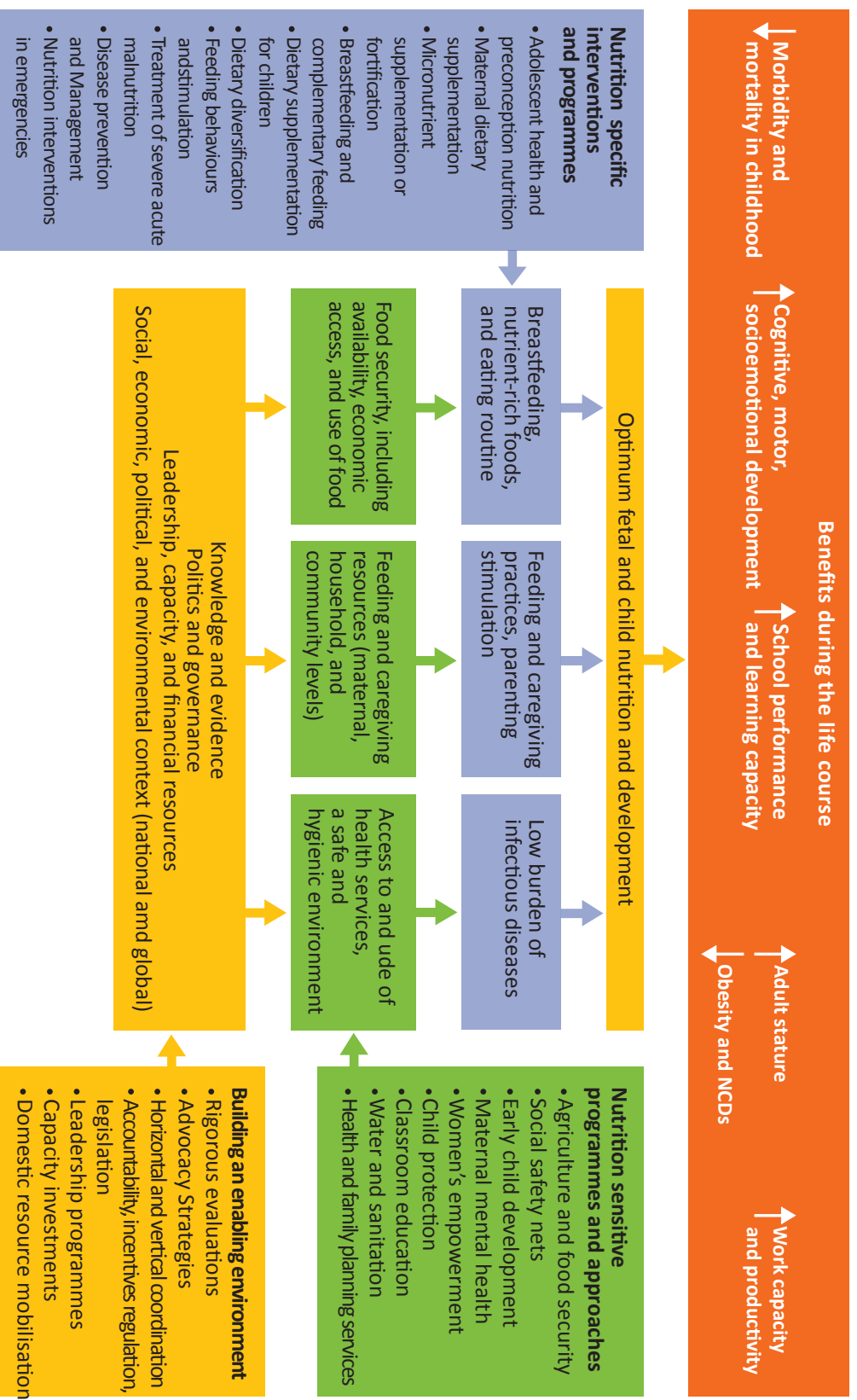
- ***Nutrition-specific indicators:*** This category refers to a basket of indicators that relates to interventions that have direct bearing on maternal and child nutrition outcomes. These interventions mostly address the immediate and underlying determinants of malnutrition. They include interventions such as adolescent health and preconception nutrition, maternal dietary supplementation, micronutrient supplementation or fortification, breastfeeding and complementary feeding, dietary supplementation for children, feeding behaviours and stimulation, treatment of severe acute malnutrition, disease prevention and management, nutrition intervention in emergencies. These interventions mainly fall under the 10 Health sector interventions of National Nutrition Strategy and Plan of Action (2016-2020) for Lao PDR (See graph 14)
- ***Nutrition sensitive indicators:*** This category also refers to a basket of indicators that indirectly contribute to maternal and child nutrition outcomes. They include interventions related to agriculture and food security; social child protection; water and sanitation; health and family planning services; education as well as nutrition governance. These interventions mainly fall within the 12 interventions of agriculture, education and governance in the National Nutrition Strategy and Plan of Action (2016-2020) (See graph 14).

A total of 4,378 indicators were reviewed from the key sectors as shown by the table below.

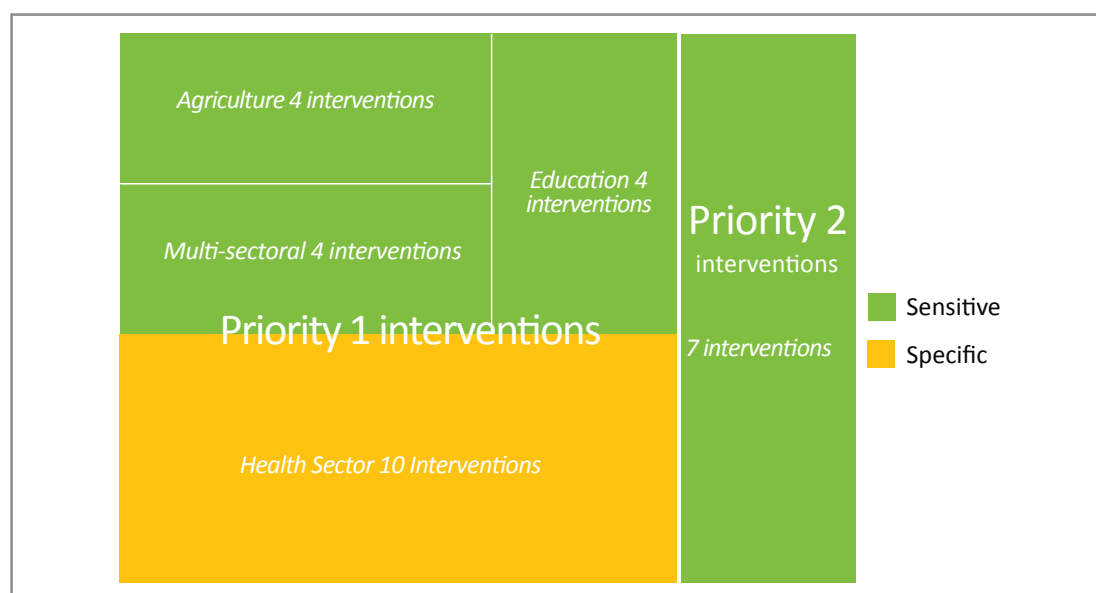
Table 11. The number of indicators by type

Type of indicators	The number of indicators
Specific	233
Sensitive	1 308
Other	2 840
Total	4 381

Graph 13. The Lancet Conceptual Model on “Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?” (Black et al, Lancet 2013)



Graph 14. Interventions of National Plan of Action on Nutrition

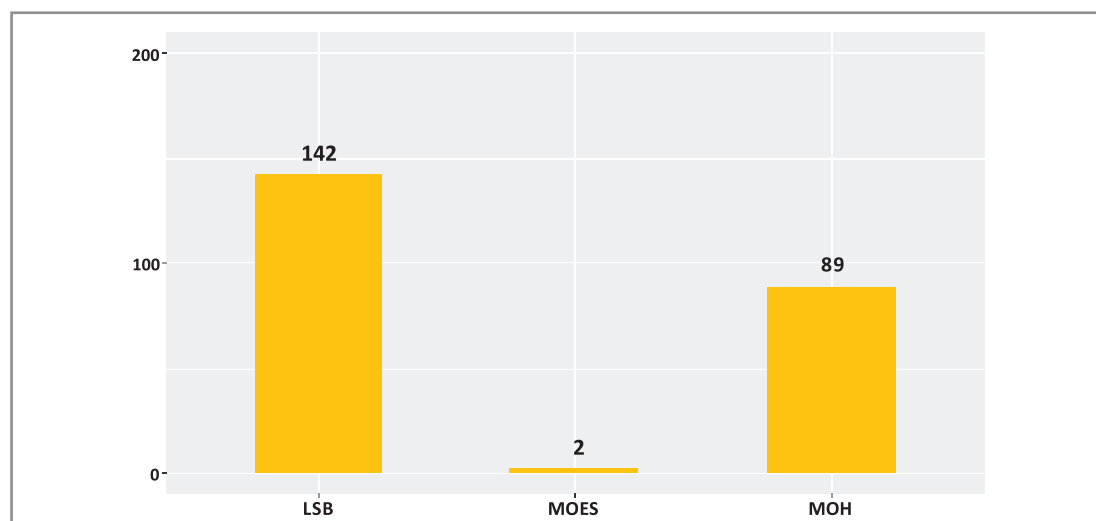


4.2 The nutrition specific indicators

A total of 233 indicators were identified as nutrition specific from the list of indicators presented by the respective departments of ministries. These indicators mainly fall under 10 Health sector interventions of the National Nutrition Strategy and Plan of Action on Nutrition 2016-2020.

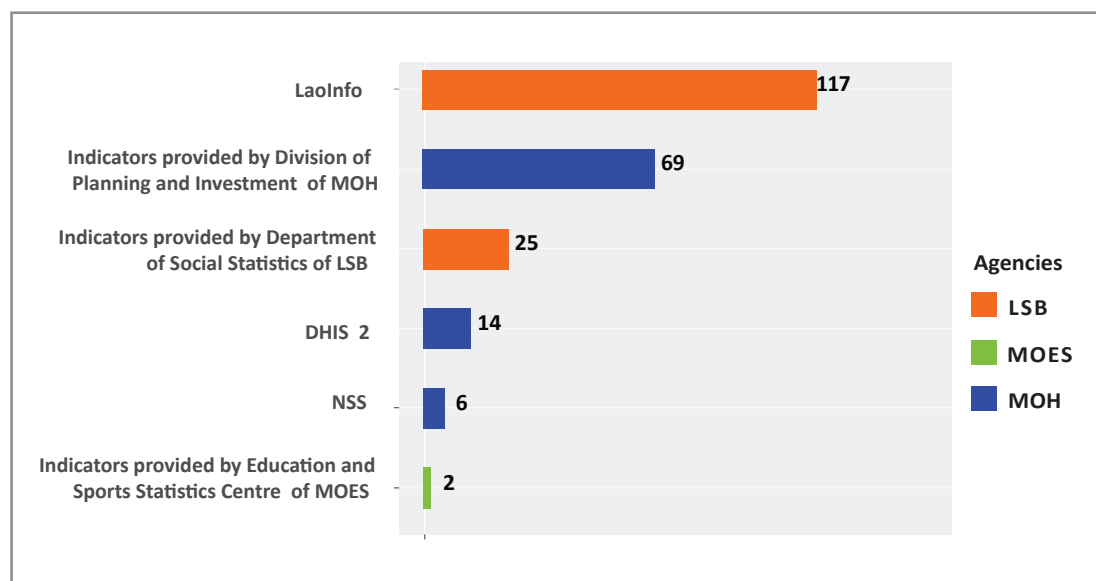
Graph 15 shows the distribution of selected nutrition specific indicators by Agencies. These include indicators from LSB, MOES and MOH.

Graph 15. The nutrition specific indicators by agencies



Graph 16 illustrates the distribution of nutrition specific indicators by the list of indicators provided by agencies and Information Systems. As seen from the Graph 15, significant numbers of nutrition specific indicators are form Lao Info and the list of indicators provided by MOH.

Graph 16. The nutrition specific indicators by the datasets provided by agencies



As seen from table 12, information on attributes is not fully provided for significant number of nutrition specific indicators.

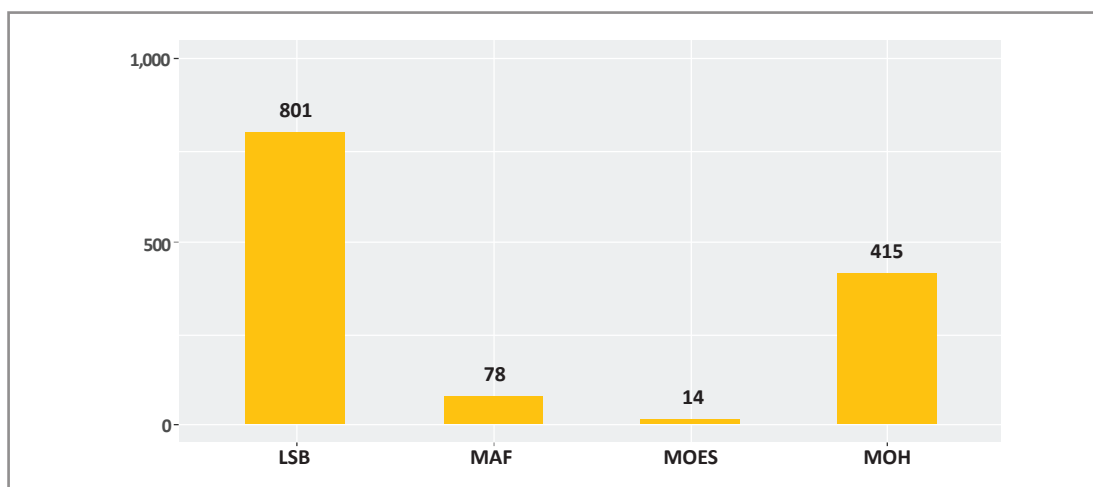
Table 12. Percentage of nutrition specific indicators for which information on attributes provided by agencies

Ministry	LSB	MOES	MOH
Definition of indicator	0.0	0.0	92.1
Geographic level	82.4	0.0	32.6
Frequency of data collection	51.4	0.0	95.5
Organization in charge of data collection	89.4	0.0	100.0
Organization in charge of data management	82.4	0.0	22.5

4.3 The nutrition sensitive indicators

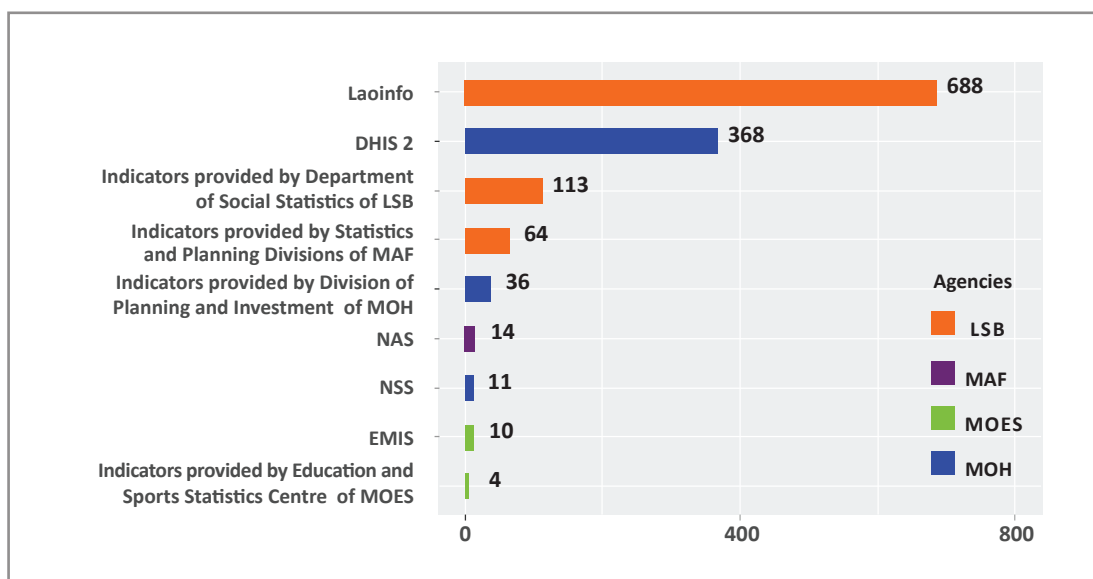
A total of 1308 indicators were identified from the list of indicators that were presented. Graph 17 illustrates the number of nutrition sensitive indicators by agencies. As seen from the graph significant numbers of nutrition sensitive indicators were provided by LSB and MOH.

Graph 17. The nutrition sensitive indicators by agencies



The graph below illustrates the number of nutrition sensitive indicators by datasets. As seen from the graph significant numbers of indicators are from DHIS 2 and LaoInfo information systems.

Graph 18. The nutrition sensitive indicators by agencies the datasets provided by agencies



Tables 13 shows that most attributes for nutrition sensitive indicators were not provided by Department of Social Statistics of LSB and Education and Sports Statistics Centre of MOES

Table 13. Percentage of nutrition sensitive indicators for which information on attributes by provided by agencies

Attributes of indicators	LSB	MAF	MOES	MOH
Definition of indicator	0.0	29.5	0.0	97.3
Geographic level	85.9	100.0	71.4	97.8
Frequency of data collection	60.4	98.7	71.4	99.5
Organization in charge of data collection	89.9	100.0	71.4	100.0
Organization in charge of data management	85.9	100.0	71.4	91.3

5.0 Conclusions and recommendations

The Data Mapping activity strengthened the partnership and coordination among the NIPN stakeholders. The results of the Data Mapping and information collected provide the foundation for building data repository and online dashboard. The results will be used for planning the nutrition related analysis in Lao PDR as well.

Based on observations and analysis the following conclusions and recommendations were suggested:

a. Data storage is not centralized in some agencies

- ✓ There are multiple datasets and information systems with different data formats in some agencies. This may pose challenge in timely access data for decision making.
- ✓ Significant numbers of data are stored in Excel formats. These are more unstable and liable to bugs when exported to different computers with different versions of Microsoft suits. Also, the risk of computer hardware malfunction or virus attack could compromise data stored in such formats.
- ✓ Significant number of indicators routinely used for planning are stored and processed outside of information system on individual computers. This increases the transaction time in accessing data for decision making and also has associated risks in terms of data storage.

Recommendation 1

Harmonize information management systems by developing centralized information system in the respective sectors for timely access to data for policy decisions; safe guard institutional data with enhanced security and facilitate data sharing among agencies.

b. Data Storage, processing and exchange requires strengthening

- ✓ Agencies have different internal information systems and datasets with different data formats. This poses challenge for data aggregation across sectors for meta-analysis to inform policy and evidence-based decision making,
- ✓ Metadata was missing for many indicators in agencies. This makes it challenging to compare indicators across sectors and to conduct secondary analysis due to lack of meta data to ascertain certain indicator parameters.

Recommendation 2

Introduce the data quality standards such as SDMX or other for metadata, storing, processing and exchange of data in agencies. This will enhance data quality and storage as well as facilitate data exchange among the sectors.

c. Review routine information systems to make them efficient and user friendly

- ✓ There are many data elements in the sectoral information management systems.
- ✓ In some cases, there are multiple indicators measuring same outcome
- ✓ Not all the data, that are collected, are used for routine planning and progress monitoring

Recommendation 3

Data audit to archive data that are not useful to free space and make the information systems more users friendly.

Annexes

Annex 1. Questionnaire for meeting with partners to conduct data mapping and capacity need assessment.

Background information of NIPN

The overall objective of the National Information Platform for Nutrition (NIPN) initiative is to contribute to the global reduction of stunting (chronic under nutrition) in alignment with the World Health Assembly 2025 targets. The specific objective of the NIPN is to build the national capacity both at national and sub-national levels to manage, analyse information and data from all sectors at national and sub-national levels which have an influence on nutrition, to track progress, disseminate and use information to better inform the policies and strategic decisions.

NIPN creates an opportunity to bring all existing nutrition related information and data from all sectors together and analyse to support the development of evidence-based policies and programmes to improve human nutrition. The Government of Lao PDR, and in particular the National Nutrition Committee Secretariat acknowledges the need for strengthening a nutrition information system that can generate quality data timely, perform analyses, track progress against set actions and use it for policy development, expanding political commitment and allocating more public funding for nutrition initiatives.

The NIPN is expected to be an important platform and to have a major role to play in informing nutrition programming and policy in the future. The function of a National Information Platform for Nutrition is to inform policies and programmes for improving human nutrition in Lao PDR by bringing together and analysing information and data from all sectors that can influence nutrition such as health, agriculture, food security, education, water, sanitation and social protection. The NIPN is conceived to strengthen the capacity of government bodies, such as national statistics or planning institutes or departments.

Objectives of data mapping and capacity gap assessment

- Mapping of data by sectors aims to identify relevant nutrition related data and indicators collected routinely by the different sectors and published in existent information platforms such as DHIS 2, EMIS, LaoInfo and others.
- Capacity need assessment aims to identify the training needs of the partners in the area of statistical data analysis, data visualization and GIS.

General Information.

1. The name of agency _____
2. Total number of staff _____
3. Total number of specialist in the main functional area of your agency _____

Questions for mapping of data by sectors

1. Please share the list of all indicators that your agency collects through established routine system level highlighting the source , level (country, province, district etc.) and periodicity of collection (yearly, every half year, quarterly etc.)
2. Please share the list of surveys together with report and questioner of survey that your agency conducted or conducts periodically highlighting the level of representations (country, province etc.) and periodicity of survey.
3. Please share the definition of indicators and data formats used for storing and exchanging data and indicators.

Questions for capacity need assessment

1. What kind of software does the staff of your organization use for data analysis and visualizations?

Type of software	Yes/No
Statistical software	
<i>R</i>	
<i>STATA</i>	
<i>SPSS</i>	
<i>Other soft, please specify</i>	
GIS software	
<i>Arc GIS</i>	
<i>QGIS</i>	
<i>If other soft, please specify</i>	

2. Please indicate the number of staff with “advanced” ,”average” and “poor” skills in the use of data analysis and visualizations software.

Type of software	Number of staff with “advanced” skills	Number of staff with “average” skills	Number of staff with “poor” skills
Statistical software			
<i>R</i>			
<i>STATA</i>			
<i>SPSS</i>			

<i>If other soft, please specify</i>			
GIS software			
<i>Arc GIS</i>			
<i>QGIS</i>			
<i>If other soft, please specify</i>			

3. Please identify what kind of statistical methods that the staffs of your organization have used for data analysis.

Methods	How many times
Descriptive statistics (calculation of means, moda, medians, confidence intervals, estimation of parameters, testing hypothesis and other)	
Advanced statistics (Regression, Clustering, Principal Component Analysis, other)	
Data science (Neural Networks, Fuzzy classification and other)	
If any other methods, please specify	

4. Please identify capacity building needs.

Type of training	Number of people that needs training	Other comments
Basic Statistics		
Advanced Statistics		
Data Visualization		
GIS		
The use of statistical soft R		
If other, please specify		

Annex 2. This list of overlapping indicators

Overlapping indicators in DHIS 2 and the list provided by Division of Planning and Investment of The Ministry of Health

WHO RMNCAH: TT 2 coverage for pregnant women (%) (Annualized) TT2+ coverage among pregnant women (%)

DHIS 2	Indicators provided by Division of Planning and Investment of The Ministry of Health
IPD: Bed occupancy rate (%)	Bed occupancy rate (day)
MAL E: Severe malaria case	Severe Malaria Rate
MAL E: Total population (Estimate LSB data) (District level)	Population
MCH: Caesarean Section rate	Caesarean section rate (%)
MCH: Maternal mortality ratio (per 100,000 live births) Annualized	Maternal Mortality Ratio (per 100,000 live births)
NCI: Diabetes Mellitus Prevalence (per 100,000 pop) (Annualized)	Diabetes Mellitus prevalence (%)
NCI: Hospital beds (per 10,000 pop) (Annualized)	Hospital beds per 10,000 population
NCI: Incidence of reported ARI among under 5 years (%) (Annualized)	Incidence of Reported ARI among under 5
NCI: Incidence of reported diarrhoea among <5 years (%) (Annualized)	Incidence of reported diarrhoea among < 5 (%)
NCI: Malaria mortality rate (per 100,000 pop) (Annualized)	Malaria mortality rate (%)
NCI: TB prevalence among adult people (Annualized)	TB prevalence among adult population
PI IPD: Average length of stay	Average length of stay
TB treatment success rate	TB treatment success rate (%)
WHO RMNCAH: TT 2 coverage for pregnant women (%) (Annualized)	TT2+ coverage among pregnant women (%)

Overlapping indicators in DHIS 2 and Nutrition Sentinel Surveillance

DHIS 2	Nutrition Sentinel Surveillance
NCI: Children <5 years underweight (Annualized)	Underweight

Overlapping indicators in the list provided by Division of Planning and Investment of The Ministry of Health and Nutrition Sentinel Surveillance

Indicators provided by Division of Planning and Investment of The Ministry of Health			Nutrition Sentinel Surveillance
Prevalence of wasting in children under 5 years of age			Wasting
Prevalence of underweight in children under 5 years of age			Underweight
Prevalence of stunting in children under 5 years of age			Stunting

Overlapping indicators in the list provided by Education and Sports Statistics Centre within the Ministry of Education and Sports and EDUINFO

ID ²	Indicator's name		ID
1011	Survival rate in primary education	Survival rate for primary education	1027

Overlapping indicators in list provided by Division of Planning and Investment of The Ministry of Health within the same dataset

ID	Indicators provided by Division of Planning and Investment of The Ministry of Health		ID
724	Proportion of children aged 12-59 months receiving vitamin A supplementation (round 1)	Proportion of children aged 12-59 months receiving vitamin A supplementation (round 1)	725
745	Proportion of children who continue breastfeeding until 1 year of age	Proportion of children who continue breastfeeding until 1 year of age	805

² ID – indicator's ID number in dataset

Overlapping indicators in EMIS

ID	The name of overlapping indicators in EMIS		ID
934	Secondary: Number of repetition by grade, gender and age	Secondary: Number of repetition by grade, gender and age	938

Overlapping indicators in Laolnfo within the same dataset

ID	The name of overlapping indicators in Laolnfo		ID
1099	Proportion of population using an improved drinking water source	Proportion of population using an improved drinking water source	1211
1165	Proportion of household use modern toilet	Proportion of household use modern toilet	1178
1166	Proportion of household use normal toilet	Proportion of household use normal toilet	1179
1678	Mean number of children ever born	Mean number of children ever born	1872
1779	Percentage of children age 2-14 years who experienced physical punishment any	Children age 2-14 years who experienced physical punishment	1781
1836	Infant mortality rate	Infant mortality rate	1860
1836	Infant mortality rate	Infant mortality rate	2876
1836	Infant mortality rate	Infant mortality rate	2910
1836	Infant mortality rate	Infant mortality rate	2981
1836	Infant mortality rate	Infant mortality rate per 1000 of life birth	2016
1837	Under-five mortality rate	Under five mortality rate	1871
1837	Under-five mortality rate	Under-five mortality rate	2908
1837	Under-five mortality rate	Under five mortality rate	2911
1837	Under-five mortality rate	Under 5 mortality rate per 1000 of life birth	2531
1837	Under-five mortality rate	Under-5 mortality rate	3022
1845	Percentage distribution of population	Percentage distribution of population	2945

1847	Population density	Population density	2301
1848	Population size	Population Size	2304
1850	Number of household	Number of household	3234
1855	Proportion of household used electricity with cooking	Proportion of household use electricity with cooking	2942
1856	Proportion of household used wood with cooking	Proportion of household use wood with cooking	2944
1857	Proportion of household used charcoal with cooking	Proportion of household use charcoal with cooking	2940
1863	Sex ratio	Sex ratio	2952
1868	Number of village	Number of village	3287
1870	Total fertility rate	Total fertility rate	2915
1873	Crude death rate	Crude death rate	2917
1874	Life expectancy	Life expectancy	2953
1875	Proportion of household use electricity and own meter	Proportion of household use electricity and own meter	2941
1876	Proportion of household use electricity with generator	Proportion of household use electricity with generator	2920
1877	Proportion of household use electricity with sharing meter with other household	Proportion of household use electricity with sharing meter with other household	2921
2083	Number of books in library	Number of book in library	3294
2107	Number of Districts	Number of district	3357
2130	Number of Households	Number of household	3234
2143	Number of Kindergarten and nursery rooms	Number of Kindergarten and nurseries	2144
2159	Number of Magazine	Number of magazine	3319
2175	Number of Museums	Number of museum	3185
2177	Number of Newspapers	Number of newspaper	3373
2196	Number of Primary school	Number of primary school	3202
2268	Number of university student	Number of university student	3170

2277	Number of village drug kits	Number of village	3287
2278	Number of Villages	Number of village	3287
2816	Proportion of pupils starting grade 1 who reach grade 5	Proportion of pupils starting grade 1 who reach grade 5	2895
2875	HIV prevalence rate	HIV prevalence rate	2979
2880	Net enrolment ratio in primary education	Net enrolment ratio in primary education	3057
2883	Prevalence of tuberculosis	Prevalence of tuberculosis	3010
2888	Proportion of land area covered by forest	Proportion of land area covered by forest	3084
2890	Proportion of own account and contributing family workers in total employment	Proportion of own-account and contributing family workers in total employment	3087
2892	Proportion of population below food poverty line	Proportion of population below food poverty line	3088
2894	Proportion of population using solid fuels	Proportion of population using solid fuels	3090
2896	Proportion of seats held by women in national parliament	Proportion of seats held by women in national parliament	3093
2901	Ratio of girls to boys in lower secondary education	Ratio of girls to boys in Lower secondary	3098
2902	Ratio of girls to boys in primary education	Ratio of girls to boys in Primary	3099
2903	Ratio of girls to boys in tertiary education	Ratio of girls to boys in Tertiary	3100
2904	Ratio of girls to boys in upper secondary education	Ratio of girls to boys in Upper secondary	3101
2906	Share of poorest quintile in national consumption	Share of poorest quintile in national consumption	3102
2907	Share of women in wage employment in the non-agricultural sector	Share of women in wage employment in the non-agricultural sector	3103
3016	Share of food consumption by food sources for selected population grouping	Share of food consumption by food sources for selected population groupings	3017
3025	Average annual growth rate of GDP per person employed	Growth rate of GDP per person employed	3043
3140	Number of teacher and administrative staff with teaching in early child education school	Number of teacher and administrative staff with teaching in early child education school	3141

3143	Number of teacher and administrative staff with teaching in pre-primary school	Number of teacher and administrative staff with teaching in pre-primary school	3144
3152	Number of student in pre-primary school	Number of student in pre-primary school	3153
3160	Number of student in nursery, kindergarten and pre-primary school	Number of student in nursery, kindergarten and pre-primary school	3161
3162	Number of student in kindergarten school	Number of student in kindergarten school	3163
3172	Number of college student	Number of college	3208
3179	Number of administrative staff in early child education school	Number of administrative staff in early child education school	3180
3187	Number of pre-primary class	Number of pre-primary class	3188
3189	Number of class in nursery, kindergarten and pre-primary	Number of class in nursery, kindergarten and pre-primary	3190
3193	Number of class in kindergarten	Number of class in kindergarten	3194
3195	Number of nursery class	Number of nursery class	3196
3205	Number of nursery-kindergarten school	Number of nursery-kindergarten school	3206
3237	Number of household using electricity	Number of household using electricity	3245
3244	Number of role model household in health	Number of role model household in health	3247
3252	Number of robbery case	Number of robbery case	3255
3290	Number of house using electricity	Number of house using electricity	3330
3292	Number of role model house in health	Number of role model house in health	3331
3295	Number of gates and dikes	Number of gates and dikes	3553
3296	Number of victim from human traffic	Number of victim from human traffic	3298
3440	Gross budget expenditure per share of gross domestic product	Gross budget expenditure per share of gross domestic product	3441
3485	Ratio of lower secondary school dropout rate	Ratio of lower secondary school dropout rate	3486
3500	The ratio of official assistance to gross domestic product	The ratio of official assistance to gross domestic product	3501

	HIV prevalence among commercial services women age 15 -to 49 year old	HIV prevalence among commercial services women age 15 -to 49 year old	3960
3956	women age 15 -to 49 year old		
4025	Number of TB outside the lung patient	Number of TB outside the lung patient	4026
4132	Number of road accident injured	Number of road accident injured	4190
4230	Number of certified good cultural practice family	Number of certified good cultural practice family	4236
4256	Number of tourist attractions	Number of tourist attractions	4283
4263	Number of FM radio transmissions	Number of SM radio transmissions	4264

Overlapping indicators in the list provided by Statistics and Planning divisions of the Ministry of Agriculture and Forestry within the same dataset

ID	The name of overlapping indicators in the list provided by Statistics and Planning divisions of the Ministry of Agriculture and Forestry		ID
4446	Weirs: total irrigated area	Weirs: total irrigated area	4453

Overlapping indicators in Nutrition Sensitive Agriculture Information system within the same dataset

ID	Overlapping indicators in Nutrition Sensitive Agriculture Information system		ID
4466	Percent of target villages with learning and exchange	Percent of target villages with learning and exchange	4470

3512	Student-to-teacher ratio in preschool education	Student-to-teacher ratio in preschool education	3513
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Overlapping indicators in the list provided by Department of Social Statistics of Lao Statistics Bureau within the same dataset

ID	The name of overlapping indicators in the list provided by Department of Social Statistics of Lao Statistics Bureau	ID
3956	HIV prevalence among commercial services women age 15 -to 49 year old	3960
4025	Number of TB outside the lung patient	4026
4132	Number of road accident injured	4190
4230	Number of certified good cultural practice family	4236
4256	Number of tourist attractions	4283
4263	Number of FM radio transmissions	4264

Overlapping indicators in the list provided by Statistics and Planning divisions of the Ministry of Agriculture and Forestry within the same dataset

ID	The name of overlapping indicators in the list provided by Statistics and Planning divisions of the Ministry of Agriculture and Forestry	ID
4446	Weirs: total irrigated area	4453

Overlapping indicators in Nutrition Sensitive Agriculture Information system within the same dataset

ID	Overlapping indicators in Nutrition Sensitive Agriculture Information system	ID
4466	Percent of target villages with learning and exchange	4470

Annex 3. List of key persons met during the meetings on Data Mapping and Capacity Need Assessment and the staff of the Data Analysis Unit

Nutrition Centre

- Dr. Chandavone Phoxay, Director of Nutrition Centre
- Dr. Souphaxay Khamphanthong, Technical of research and surveillance Division.
- Dr. Maikho Vongxay, Technical of research and surveillance Division.

Ministry of Health (Department of Planning and Cooperation)

- Dr. Southanou Nanthanonty, Director of Planning and Investment Division
- Mr. Samaykham Boupha, DHIS2 Team
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Ministry of Education (Statistic Centre, Department of Planning)

- Mr. Maaly Vorabouth, Deputy Director General of Planning Department,

Director General of ESSC

- Mr. Bounphanh Phimmachan, Deputy head of education and sports statistic and mapping section

Ministry of Agriculture (Statistic Centre, Department of Planning and Finance)

- Ms. Vivanh Souvannamethy, Director of Centre for agricultural statistics
- Ms. Sengkeo, Deputy Director of Centre for agricultural statistics
- Mr. Hairkham Sisuvanh, Technical officer of Centre for agricultural statistic
- Ms. Monthong Keochansy, Technical officer of Centre for agricultural statistic

Lao Statistic Bureau

- Ms. Thirakha Chanthalanouvong, Director General of Social Statistic Department
- Mr. Vilaysouk , Deputy director of Social Statistic Department
- Mr. Somsamay , Technical Officer

Staff of Data Analysis Unit of NIPN initiative in LAO PDR

- Akbar Abdurakhmanov, Data Analysis Advisor for NIPN
- Ouphachay Thongsamouth, Data Manager
- Douangtavanh Kongphaly, Statistician

Annex 4. Literature and sources

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