Rural Sector Statistical Information System (RSSIS): Philippine Experience

Romeo S. Recide, Director of the Bureau of Agricultural Statistics, Department of Agriculture, Philippines

Abstract

Rural Sector Statistical Information System (RSSIS)

The RSSIS, designed as a comprehensive, integrated, well - managed and sustainable statistical system for the rural sector, was intended to aid government in developing appropriate strategies, implementing policies and programs, and monitoring the progress of poverty reduction in the rural areas.

The proposed RSSIS had 13 modules of social and economic concerns with 117 development indicators. Cited as a major limitation of the system is the absence of urban – rural disaggregation in some of the modules. Data users and producers also pointed out the need for small-area statistics to support the data requirements of local government units. To address this concern, the Project, in consultation with development stakeholders (local government officers and community leaders in the pilot region), crafted the Community Level Statistical Information System (CLSIS). The CLSIS defined a system of compiling, processing and analyzing village-level data by village officials themselves.

The RSSIS and CLSIS were developed side by side with a strong institutional capacity building program for the Bureau of Agricultural Statistics and the local government units in handling and utilizing rural sector statistics. The Project provided relevant training, necessary equipment, and practical operations manuals to key implementers of the system

Introduction

The East Asia Rural Development Unit (EASRD) of the World Bank piloted the project *Statistical Capacity Building in the Rural Sector* in the Philippines with the Bureau of Agricultural Statistics (BAS) of the Department of Agriculture as its executing agency. The project was conceptualized as an avenue for translating the Bank's "Rural Profiles" into a country-level statistical indicators system supportive of the data requirements for poverty reduction strategies, policies and programs. The main objective of the project was to design and build a comprehensive, integrated, well – managed and sustainable statistical system for the development of indicators for rural development and for monitoring rural poverty.

To realize the project's objective, a statistical framework for the rural sector was developed. The framework was initially organized based on existing statistical surveys and monitoring operations of national offices. Based on the initial observation that the existing systems were insufficient to support a rural statistical framework, the project designed the conduct of a pilot survey of the rural sector to fill in the gaps. The rural survey was piloted in the province of Cebu.

While the RSSIS appeared to be the central output of this project, it must be noted that a significant amount of project resources were invested in a

comprehensive statistical capacity building. The BAS was the major beneficiary with about a dozen of training courses conducted for its technical staff, both from the Central Office and Field Operations Centers. A number of technical staff from other national agencies was also invited to participate in the courses. The capacity building component was further extended to local government units (LGUs) in Region VII or Central Visayas. As the RSSIS was designed and built up, the idea of establishing a community level version of the RSSIS elicited interest, gradually evolved and finally led to the development of the Community Level Statistical Information System (CLSIS).

The CLSIS would inevitably require building up the capacity of the LGUs in implementing systems for collecting, processing, analyzing and disseminating local-level information. Thus, suitable training courses for LGU officers and village leaders were designed and conducted. In the course of implementing these activities, a strong partnership was forged between the BAS, other statistical agencies and the LGUs in the pilot region.

Objectives and Processes in the Development of the RSSIS

Objective: The general intention of the RSSIS was to make available all the important and relevant statistical indicators that were required in monitoring rural welfare and the progress in poverty reduction in the country. As cited in the project document, the World Bank, through its EASRD Unit had operationalized "Rural Profiles" as a database available on both World Wide Web and the Bank's Intranet. As an indicators system, the Rural Profiles described progress in rural development by means of social and economic indicators.

Assessment of Data Systems: A critical step towards developing the RSSIS is the assessment of the existing rural sector – related data systems in the country. The assessment of rural sector data systems considered the following exercises: review of the basic mandates of major statistical agencies; review of existing data that normally carry rural – urban disaggregation; and visits to major data producers and users of rural statistics. These assessment activities had confirmed the Project's hypothesis that the Philippine Statistical System (PSS) had enough experience in statistical indicator systems that was useful in consolidating and integrating rural – based statistics in order to prepare a Philippine version of the WB Rural Profiles.

Revisiting the Agricultural Indicators System (AIS): . In preparation for the formulation of the draft framework for the RSSIS, it was necessary to revisit its Agricultural Information System (AIS) of the BAS. Almost fifteen years ago, the BAS did an undertaking similar to the RSSIS. The main difference was that while the AIS was very focused on the agriculture sector, the RSSIS was envisioned to cover all of the rural sector. In many ways though, and in the context of Philippine setting, agricultural and rural sectors might be used interchangeably.

Drafting the RSSIS Framework: The RSSIS framework was developed so that duplication of statistical outputs of the BAS and those of other data – producing agencies was avoided. As an indicators system designed to capture

the characteristics of the rural sector of the country, it was required that data inputs should have urban and rural dimensions. In addition, the RSSIS was meant to characterize the rural sector comprehensively; thus the indicators had to cut across a broad spectrum of economic, social, and financial concerns. This formed one major constraint of the BAS its mandate has largely focused on agriculture alone. Based on their background and training, BAS staff needed stronger appreciation for and greater understanding of indicators of rural poverty or rural development.

Consultative Meetings: To generate additional insights, as well as confirm status of data requirements and availability, the draft RSSIS Framework was presented to both data users and producers. Participants in these consultative meetings contributed to a better understanding of the objectives of and the requirements for development of the RSSIS. As experience in the Project later showed, consultations were to become an indispensable and useful mechanism in refining Project concepts and advancing implementation of Project activities. To begin with, the BAS was a large data producer by itself, thus internal consultations among its operating units, particularly between the internal data users and producers were periodically done. Consultations with other statistical agencies were also done extensively, either in large and formal settings or small and informal discussions.

Initial Run of the RSSIS: In its initial phases, the RSSIS ran into database management problems that forced the staff to go manual, just to jumpstart the implementation and familiarize the BAS staff with the various RSSIS concerns, and anticipate possible problems in actual data collection, compilation and computation of indicators. The staff had to struggle with manipulating Excel files to develop the desired indicators. Re - inputting of data coming from other agencies had to be done in some cases due to inefficient procedures. Results of these exercises, which came in the form of indicators in statistical tables, were presented and discussed in the September 2004 seminar–workshop of concerned BAS Central Office and field personnel

Development of computer – based systems: One of the objectives of the RSSIS Project was to revisit and upgrade the management of the existing AIS of the BAS. An ACCESS – based system had been developed and managing the AIS had greatly improved since then. The access to and updating of AIS reports had become faster. On the other hand, the development of the computer – based system for the RSSIS had already begun. The application programs were to be completed before the end of 2004.

Issues and Constraints in Pursuing the RSSIS

Urban – Rural classification: If there was one concern that could block smooth development of meaningful presentation of rural statistics and indicators, that would be the differentiation between rural and urban areas. The view in the Project was that the existing operational definition of rural and urban areas, which set up criteria of urbanity, and took rural areas as the complement, was not supportive of the overall objective of the Project to develop a comprehensive and well – managed statistical information system for the rural sector.

Sometime, in 2002, the Philippine National Statistics Office (PNSO) presented the results of the work on the formulation of an operational definition of urban areas for the Philippines based on the revalidated information on barangay (village) characteristics. Concerns about the disregard of the agrarian character of rural communities as well as the use of dynamic variables such as population and existence of commercial and industrial establishments as the anchor of the urban classification scheme have been raised.

In line with this observation, this Project had expressed this concern and submitted a proposal to review the process of urban – rural classification by incorporating in the process the identification of inherent characteristics of both urban and rural communities instead of simply focusing attention on urban – like characteristics and completely overlooking the built – in characteristics or features of rural communities.

Agriculture and Rural Statistics: In broad and practical terms, the distinction between agricultural and rural areas did not pose that much of a problem in policy discussions. Development policies and programs in the country accounted for both groups. In the AIS of the BAS, disaggregation of statistics was agriculture–focused, i.e., agricultural vs. non–agricultural or farming vs non–farming. The BAS supplemented its data holdings by obtaining data from other sources. From PNSO, results of the agricultural censuses as well results of its various surveys with urban-rural dimensions were collected, processed and organized into various components of the AIS.

Linking up with Source Agencies: The RSSIS required data inputs that would come from almost all line departments of the Philippine Government. Since the Philippine Statistical System (PSS) was highly decentralized, working out an integrated information system as envisioned under the RSSIS would e a challenge. Apart from potential difficulties to be encountered in eliciting cooperation among various agencies, concerns regarding possible problems in synchronizing availability of data at desired levels of disaggregation and frequency of release were expressed.

Despite advancement in technology, certain constraints such as problems in compatibility of facilities and operating software had posed challenges in the development of efficient and effective data-handling procedures. Latest efforts on database development for the RSSIS were on–going and issues on linkages were being considered.

Statistics other than agricultural statistics: The proposed RSSIS required a big number of social statistics as inputs in the generation of indicators. The BAS, which heretofore had largely focused on agricultural statistics, had to adjust its orientation to develop an appreciation of social and other economic statistics. This turned out to be a huge challenge to the RSSIS project staff who were overwhelmed by the sheer volume of available socio-economic data that needed to be transformed into the specified indicators.

RSSIS Framework

Patterned after the WB Rural Profiles, the Philippines' RSSIS shall be an information system that could describe and monitor changes in the rural sector. It should be able to accurately situate the rural sector in the total national economy. The RSSIS framework assumed that at the center of all efforts associated with rural development was the overall goal of alleviating the worsening poverty among rural communities.

Rural poverty, therefore, became the central theme with the other twelve areas of concerns, serving as explanatory of the conditions of the rural sector. The information system was envisioned to account for both economic and social statistics and indicators in order to adequately characterize the rural sector.

Figure1. Schematic diagram of the RSSIS Framework
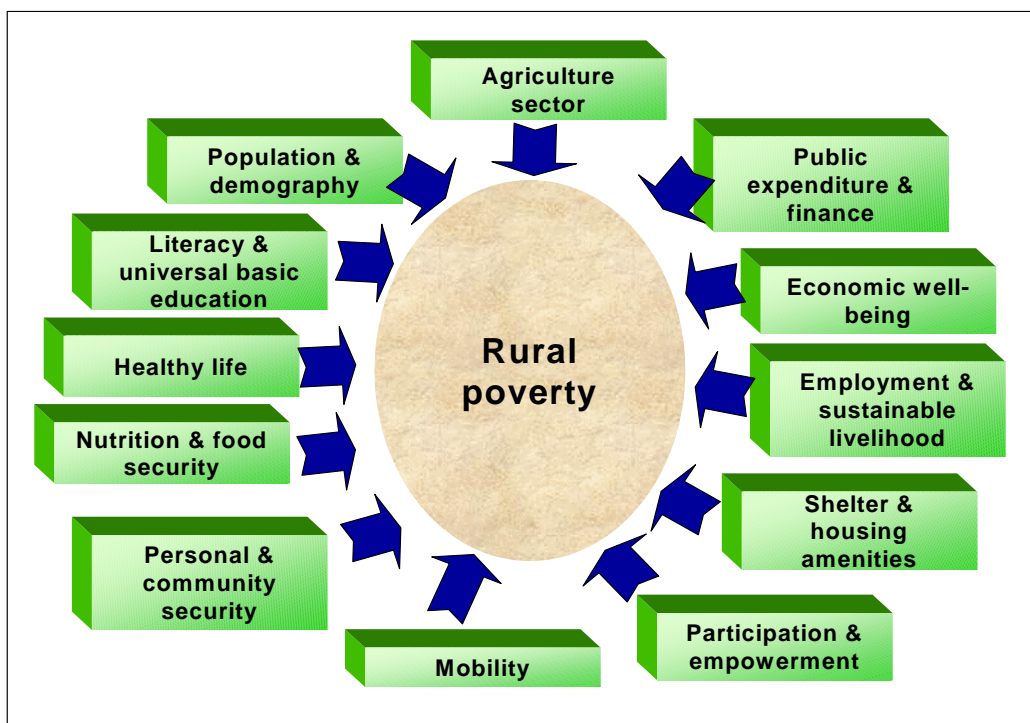
The RSSIS framework recognized the significance of the agriculture sector as one area of concern, agriculture being identified as the single most important characteristics identified with the rural sector. The framework, therefore, highlighted the details of the eight sub–areas of concern under the agriculture sector.

Figure 2. Schematic diagram of the RSSIS for agriculture sector
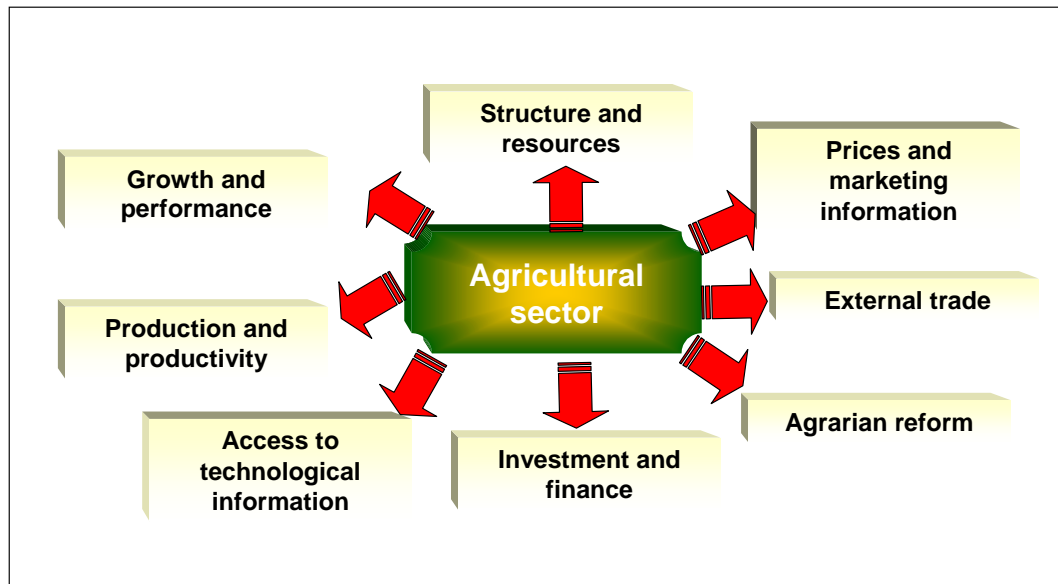
The RSSIS Modules

To facilitate the implementation of the RSSIS and to harmonize work within the BAS, areas of concern as used in the framework were also referred to as RSSIS modules. In its original draft, the RSSIS framework called for the development of 117 development indicators in 13 modules. The following table shows the details.

Table 1. Number of indicators by module of the RSSIS

MODULE	NUMBER OF INDICATORS
1. Rural poverty	4
2. Economic well - being	9
3. Agricultural sector	
3.1 Growth and performance	4
3.2 Production and productivity	10
3.3 Structure and resources	4
3.4 Prices and marketing	6
3.5 External trade	3
3.6 Access to technology information	3
3.7 Investment and finance	5
3.8 Agrarian reform	2
4. Population and demography	8
5. Literacy and universal primary education	9
6. Healthy life	11
7. Nutrition and food security	11
8. Shelter and household amenities	6
9. Employment and sustainable livelihood	10
10. Mobility	2
11. Participation and empowerment	4
12. Personal and community security	3
13. Public expenditure and finance	3

On top of the 13 modules, the RSSIS strongly suggested the inclusion of rural infrastructures . Specifically, the system should account for the following:

- Community facilities
- Roads and transport facilities
- Education
- Health and nutrition
- Economic establishments

Managing the RSSIS

The relatively long experience of the BAS in developing and maintaining the Agricultural Indicators System (AIS) was thought to be an edge and a guarantee in being able to manage the RSSIS. The perception was not entirely correct. The RSSIS was a lot bigger and expansive than the AIS. The BAS has to deal with a lot of non–agricultural and non–economic data which it did not produce.

Understandably, in its initial stages, the collection and compilation of data inputs had overwhelmed the staff. Data required for computing indicators consisted of long series data with which Project staff were not familiar. The delay in the development of working processing systems further aggravated the difficulties. On the coordination side, the BAS had to improve its linkage with source agencies and this was especially true with offices outside the Department of Agriculture and those which were not major statistical agencies.

To the credit of the PSS and the member statistical agencies, despite the decentralized nature of the system, a culture of coordination and cooperation among agencies was in place. And since implementation of the RSSIS was certain to be a multi-agency undertaking, from the very beginning, the conceptualization and implementation of the RSSIS always had all the stakeholders in mind. To give full expression to this guiding principle, an inter-agency advisory committee was created. Membership consisted of the major producers of rural statistics and users of rural sector indicators. The Committee was chaired and co–chaired by the Director of the Agriculture Staff of the National Economic and Development Authority (NEDA) and the Director of the BAS, respectively. Internally, the BAS also created an inter-division Steering Committee to oversee Project activities.

Developing the Community Level Statistical Information System (CLSIS)

As earlier pointed out in this paper, the RSSIS framework saw a good level of support from the existing national data systems. It was clear, however, that while the RSSIS can ably support the requirements for national level policy and decision making, it could not do so for sub–national government units. With the current shift in governance from centralized to devolved mode, whereby the local government units are vested with the authority and responsibility to chart their own development, an appropriate Community Level Statistical Information System (CLSIS) should be set in place to assist them. With this purpose in mind, the

Project explored possibilities of bringing down to the municipalities and barangays the community level version of the RSSIS.

The BAS proceeded to identify pilot areas in the Region and conduct consultations with the stakeholders in the communities. They included the local government executives and officers of local government units (LGUs) in the pilot municipalities and barangays. As in the development of the RSSIS, the Project first undertook an assessment of the community data systems and then looked into the requirements and availability of data in the community. An important factor studied was whether communities used statistics in their development-related decisions and activities. Findings were varied and interesting. Some LGUs hardly used quantitative information, even if they were available, in their decision–making. Data generated and made available were often unstandardized and disorganized and therefore difficult to use.

The Project found keen interest among LGUs in developing a community–based statistical information system. The LGU officers worked closely with Project management and staff in developing the information system in their respective areas. One important input to the development and subsequent management or maintenance of the system was the building of capacity of the local government to implement the system. The Project heavily invested on training, in addition providing seed equipment and facilities required by the system.

The Statistical Research and Training Center (SRTC) of the Philippines played a key role in implementing the training component of the Project. The Project used SRTC's competence in running training programs to develop the materials, engage qualified trainers, and manage the actual training sessions.

Since it was a community–based system, the data requirements were locally determined as well. On top of the existing data systems, LGU officers were asked to identify the information they required to support their policy and decision–making. These information were incorporated in the barangay survey, the results of which were processed in the communities by LGU staff themselves with the guidance of BAS field staff. Within the project life, the CLSIS databases would have been operationalized. The LGU officers were equipped with the necessary training to maintain and manage the system. The BAS will likewise support and provide technical assistance to the LGUs.

The CLSIS survey questionnaire consisted of two modules ; the first was on demographic profile while the second gathered data on household members. Some sort of report cards on agriculture had also been developed to make it easier for the LGU to track developments in the agriculture sector. The major topics of the CLSIS questionnaire were demography, livelihood, migration, mobility, education, health, participation, and employment.

On the other hand, the agriculture report cards contained information on crops planted and harvested; monthly crop monitoring; crop damage; prices of agricultural outputs and inputs; livestock inventory, supply and utilization; aquaculture stocks and harvest; fish production; and agro-processing, handicraft and other home-based livelihood.

Future Directions

On the maintenance of the RSSIS: The BAS was committed to maintain the final version of the RSSIS to be determined at the end of the project. Its implementation schedule shall account for the reasonable lags of data releases from sources and indicate the releases of the reports on indicators. In this connection, the strong support of other statistics-generating agency of the Government shall be enhanced to ensure continuous flow of data inputs to the RSSIS.

The existing Agricultural Indicators System (AIS) may be adopted as the RSSIS' module on the agriculture sector. The BAS shall be the main, if not the sole, source of most data inputs for the module on agriculture sector. The modular character of the RSSIS and the AIS would make it relatively easy to handle retrieval and releases of indicators and statistical reports.

The BAS shall target annual releases of the RSSIS reports by module. A full report might be targeted for release every three years. However, RSSIS tables and graphs depicting available indicators for particular modules shall be posted in the WEB as soon as they were available.

On the maintenance of the CLSIS: The BAS was committed to provide technical assistance to the local government units as they went about collecting, processing and analyzing data inputs to their CLSIS. The good working relationship forged between the BAS, SRTC and the LGUs shall be strengthened further. Where necessary, formal and informal agreements regarding training assistance and procurement of other services may be entered into. Part of the commitments made by the LGUs was for them to continuously update their CLSIS database. Annual releases of reports, which shall be posted in the BAS and other WEB sites, shall be targeted.

Complementation between BAS, SRTC and LGUs: The BAS was looking at a three – way complementation among BAS, SRTC and the LGUs in institutionalizing the CLSIS. SRTC and the BAS shall assist the LGUs in implementing CLSIS. Data collected by the BAS from various sources can be accessed by the CLSIS - covered barangays. In return, data collected by the LGUs in updating their CLSIS can also serve as inputs to the BAS in its agricultural production and marketing monitoring activities.

ANNEX : List of indicators by area of concern, RSSIS

AREA OF CONCERN/ MODULE	INDICATORS	SOURCE OF DATA INPUTS
1. Rural poverty	1. poverty headcount index 2. population below $1 a day 3. poverty gap 4. poverty threshold	Food and Nutrition Research Institute (FNRI), National Statistics Office (NSO), National Statistical Coordination Board (NSCB)
2. Economic well - being	1. proportion of food expenditure to total expenditure 2. income (expenditure) ratio of top 10 % to bottom 30% 3. ratio of mean income of rural households to urban households 4. per capita household expenditure (ratio of rural to urban) 5. savings rate, by main occupation/industry 6. proportion of rural households working/ cultivating agricultural land area smaller than the national average 7. proportion of non – agricultural income to total rural household income 8. proportion of rural household with at least one OFW 9. agricultural terms of trade index	BAS, NSO

3. Agricultural sector 3.1 Growth and performance	1. percent change in GDP 2. percent change in sectoral GDP 3. distribution and percent change in agriculture GVA by major commodity group 4. growth of agriculture GVA per agricultural worker	NSCB, NSO,
3.2 Production and productivity	1. Index of area harvested for selected agricultural crops 2. agricultural production index 3. food crop production index 4. food production per capita index 5. distribution and percent change in production of cereals, roots and tubers, fruits and vegetables 6. ratio of production of high value crops to total agricultural production 7. percent change in yield per hectare of major agricultural crops 8. distribution and percent change in livestock population and production 9. fertilizer consumption per hectare of agricultural land 10. percentage of palay and corn area applied with fertilizer	BAS
3.3 Structure and resources	1. distribution of land use 2. distribution of farms by farm size 3. distribution of farms by area and tenure 4. irrigated land as proportion of agricultural land	National Irrigation Administration (NIA),
3.4 Prices and marketing	1. producers price index (prices received by farmers) 2. prices paid (for inputs) index 3. percentage of produce marketed for palay and corn 4. producer – wholesale price and producer –mretail price gaps for selected agricultural commodities 5. monthly wholesale price band for selected agricultural commodities 6. index of volume of market arrivals of selected agricultural commodities	BAS

3.5 External trade	1. agricultural export and import volume and value indices 2. distribution and percent change of major agricultural exports and imports 3. percent share of major Philippine agricultural exports and imports to world export and import trade	NSO
3.6 Access to technology information	1. ratio of farmers served per agricultural technician 2. ratio of veterinarian per 100,000 livestock population 3. circulation rate of govern ment – initiated technology information materials per 1000 farmers	Professional Regulation Commission (PRC)
3.7 Investment and finance	1. percent of rural population with increasing access to formal financial system as borrower and /or depositor 2. proportion of rural savings to total savings 3. proportion of agricultural loans to total loans 4. loan repayments for AMCFP 5. distribution of agricultural loans by source institutions	Agricultural Credit Policy Council (ACPC)
3.8 Agrarian reform	1. accomplishment of CARP 2. increase in disposable income of agrarian reform beneficiaries	Department of Agrarian Reform (DAR)

		NSO
4. population and demography	1. population and growth rate 2. crude birth rate (registered birth rate) 3. crude death rate(registered death rate) 4. fertility rate (projected) 5. rural to urban migration rate 6. age –dependency ratio 7. mean number of children per family 8. ratio of child – bearing age to total women population	
5. Literacy and universal primary education	1. primary education completion rate 2. functional literacy rate 3.performance rate in NEAT and NSAT 4. survival rate 5. drop –out rate 6. out – of – school youths, 7 – 24 years by educational attainment 7. apparent intake rate 8. gross elementary enrollment ratio 9. percentage of females among the new entrants to the secondary/tertiary levels	Department of Education (DepEd)

7. Nutrition and food security	1. percent of newborn with birthweight below 2.5 kg 2. percent of severely and moderately underweight children under 5 years 3. percent of mothers with low BMI 4. percent of population with micronutrient deficiency 5. dietary energy and protein supply per capita per day as percent of RDA 6. average food intake of major food groups 7. daily per capita protein, carbohydrates, fat intake 8. percentage of energy from protein, carbohydrates, fat 9. percent of households below food threshold 10. ratio of growth of rice, fish,, meat. Vegetables production to population growth rate 11. ratio of total domestic production of staple food crops to total food supply	NSCB, FNRI, BAS
8. Shelter and household amenities	1. proportion of households in makeshift dwelling unit 2. distribution of household by type of dwelling unit 3. percentage of households with 3 or more persons per room 4. price index of construction materials 5. rental index 6. percent change in the volume and value of housing loans	NSO

9. Employment sustainable livelihood	1. labor force participation rate by major age group, by sex, by educational attainment , by occupation by industry	NSO
	2. percentage of gainfully employed working age population	
	3. proportion of persons under 15 years and over 65 years of age in the labor market	
	4. percentage of unemployed economically active population	
	5. underemployment rate	
	6. percentage of the unemployed who have completed at least secondary level education	
	7. percentage of employed persons in the rural sector who were engaged in non farm activities	
	8. percentage of women in non agricultural employment	
	9. percentage of economically active population covered by social security schemes	
	10. index of real earnings by occupation or by industry or by sex	

10. Mobility	1. percent change in the number of kilometers of rural paved roads 2. access to social amenities(inventory of national bridges, flyovers)	Department of Public Works and Highways (DPWH)
11. Participation and empowerment	1. percent change in the number of cooperatives, civic, religious, and other community organizations 2. percentage of population with active membership in at least one community - wide organization 3. participation in elections of qualified voters 4. increased participation of women	Cooperatives Development Authority (CDA), Commission on Elections (COMELEC)
12. personal and community security	1. number of victims of crime against person 2. number of victims of crime against property 3. number of persons displaced by calamities (manmade and natural)	Philippine National Police (PNP), Department of Social Welfare and Development (DSWD)
13. Public expenditure and finance	1. national government expenditure in agriculture by type of expenditure (appropriations and support to operations) 2. local government expenditure in agriculture by type of expenditure 3. expenditures on agricultural investment and credit	Department of Budget and Management (DBM)
14. Rural infrastructures	1.community facilities 2.roads and transport facilities 3.education 4.health and nutrition 5.economic establishments	NSO, DPWH, DepEd