3rd Edition

METADATA FOR NATIONAL AGRICULTURAL STATISTICS IN THE PHILIPPINES

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1963 - 2013

Republic of the Philippines
Department of Agriculture
BUREAU OF AGRICULTURAL STATISTICS

MESSAGE FROM THE DIRECTOR

We are pleased to release the third edition of the ***Metadata for National Agricultural Statistics in the Philippines***. This is a comprehensive document which presents the details about the data and databases generated and/or compiled by the Bureau of Agricultural Statistics (BAS). This third edition enhances and updates the earlier issues to further improve the products and services of CountrySTAT Philippines website.

The Metadata serves as an important vehicle for the data users towards better understanding of statistical outputs of the agricultural statistical system. Importantly, the Metadata presents the inputs and processes involved in the entire cycle of collection, generation and dissemination of statistical data.

Since the establishment of the CountrySTAT Philippines in 2006, the BAS has continuously exerted efforts to improve the system. The CountrySTAT Philippines has certainly become a well-recognized information exchange system locally and globally.

The good feedback that we are getting from the users of the CountrySTAT Philippines encourages us to improve the process documentation of our statistical activities. This exercise contributes to the enhancement of the quality of the products and services of the agricultural statistical system.

We take this opportunity to invite comments and suggestions from our data users, partners and other stakeholders in agriculture and fisheries sector.

ROMEO S. RECIDE
Director

Quezon City, Philippines
March 2013

LIST OF ACRONYMS

ACPC	*Agricultural Credit Policy Council*
ADB	*Asian Development Bank*
AED	*Agricultural Economics Division*
AFD	*Administrative and Finance Division*
AFMA	*Agriculture and Fisheries Modernization Act*
AFSIS	*ASEAN Food Security Information System*
AGMARIS	*Integrated Agricultural Marketing Information System*
AgSTAT	*Agricultural Statistical System*
ALS	*Agricultural Labor Survey*
AMNEWSS	*Agricultural Marketing News Service*
ASDP	*Agricultural Statistical Development Program*
ASEAN	*Association of South East Asian Nations*
ATs	*Agricultural Technicians*
BAEcon	*Bureau of Agricultural Economics*
BAI	*Bureau of Animal Industry*
BAR	*Bureau of Agricultural Research*
BAS	*Bureau of Agricultural Statistics*
BEANS	*BAS Electronic Archiving and Network Services*
BFAR	*Bureau of Fisheries and Aquatic Resources*
BLPS	*Backyard Livestock and Poultry Survey*
BSS	*Barangay Screening Survey*
CAF	*Census of Agriculture and Fisheries*
CF	*Census of Fisheries*
CIS	*Communal Irrigation Projects/Systems*
CLPS	*Commercial Livestock and Poultry Survey*
CLS	*Crops and Livestock Survey*
CODA	*Cotton Development Administration*
CPH	*Census of Population and Housing*
CPOD	*Census Planning and Operations Division*
CPS	*Corn Production Survey*
CrPS	*Crops Production Survey*
CRS	*Costs and Returns Survey*
CSD	*Crops Statistics Division*
DA	*Department of Agriculture*
DANR	*Department of Agriculture and Natural Resources*
DILG	*Department of Interior and Local Government*
DTI	*Department of Trade and Industry*

DTRI	*Dairy Training and Research Institute*
EC	*Economic Census*
EEZ	*Exclusive Economic Zone*
EPZA	*Economic Processing Zone Authority*
FAO	*Food and Agriculture Organization*
FIDA	*Fiber Industry Development Authority*
FIES	*Family Income and Expenditures Survey*
FNRI	*Food and Nutrition Research Institute*
FPS	*Farm Prices Survey*
FSP	*Fishery Sector Program*
HSD	*Household Statistics Department*
HVCDP	*High Value Crops Development Program*
IAC AFS	*Inter-Agency Committee on Agriculture and Fishery Statistics*
IAS	*Integrated Agricultural Survey*
ICTD	*Information and Communications Technology Division*
IMPS	*Integrated Microcomputer Processing System*
IPDCP	*Indonesia Philippines Data Collection Project*
IDSS	*Information Dissemination Services Section*
KCCDP	*Key Commercial Crops Development Program*
LFS	*Labor Force Survey*
LGUs	*Local Government Units*
LOM	*Livestock "Oksyon" Market*
LPES	*Livestock and Poultry Enterprise Survey*
MAIMIS	*Ministry of Agriculture Integrated Management Information System*
MCFS	*Municipal and Commercial Fishing Survey*
MINA	*Marketing Information Needs Assessment*
NAFC	*National Agricultural and Fishery Council*
NDA	*National Dairy Authority*
NEDA	*National Economic and Development Authority*
NFA	*National Food Authority*
NFIS	*National Fishery Information Service*
NIS	*National Irrigation Projects/Systems*
NIN	*National Information Network*
NIPAS	*National Integrated Protected Area System*
NMIS	*National Meat Inspection Service*
NSCB	*National Statistical Coordination Board*
NSO	*National Statistics Office*
NTA	*National Tobacco Administration*
PASO	*Provincial Agricultural Statistics Officer*

PCA	*Philippine Coconut Authority*
PCC	*Philippine Carabao Center*
PCSS1	*Palay and Corn Stocks Survey*
PCPS	*Palay and Corn Production Survey*
PDC	*Philippine Dairy Corporation*
PEZA	*Philippine Economic Zone Authority*
PFDA	*Philippine Fishery Development Authority*
PMS	*Price Monitoring System*
POCs	*Provincial Operations Centers*
PPS	*Palay Production Survey*
PRAISE	*Personnel Rewards and Incentives for Service Excellence*
PSA	*Philippine Statistical Association*
PSCC	*Philippine Standard Commodity Classification*
PSGC	*Philippine Standard Geographic Classification*
PSP	*Personnel Selection Plan*
PSS	*Philippine Statistical System*
QCPS	*Quarterly Coconut Production Survey*
QSCSFS	*Quarterly Survey of Commercial Swine Farm System*
QSCBFS	*Quarterly Survey ofCommercial Broiler Farm System*
RADDS	*Regional Agricultural Data Delivery System*
RASO	*Regional Agricultural Statistics Officer*
RCPS	*Rice and Corn Production Survey*
ROCs	*Regional Operations Centers*
SDASAS	*Statistical Development and Analysis in Support of the Agribusiness Sector*
SITC	*Standard International Trade Classification*
SOCD	*Statistical Operations Coordination Division*
SRA	*Sugar Regulatory Administration*
SSHPDP	*Survey of Slaughterhouses and Poultry Dressing Plants*
TWG	*Technical Working Group*
UPLB	*University of the Philippines at Los Baños*
USAID	*United States Agency for International Development*

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CHAPTER 1

NATIONAL SYSTEM OF AGRICULTURAL STATISTICS

1.1 Legal Framework and Statistical Advisory Bodies

There is no single law like a Statistical Act in the country. The basic legal framework of the agricultural statistical system in the Philippines is found in Executive Order Number 116 (EO 116) which was signed by the President of the Republic of the Philippines and issued on 30 January 1987. The EO 116 which created the Bureau of Agricultural Statistics (BAS) out of the then Bureau of Agricultural Economics (BAEcon) mandates the BAS to do the following:

1) *collect, compile, and release official agricultural statistics;*
2) *exercise technical supervision over data collection centers; and*
3) *coordinate all agricultural statistics and economic research activities of all bureaus, corporations and offices under the Department of Agriculture.*

The Philippine Republic Act No. 8435, otherwise known as the Agriculture and Fisheries Modernization Act (AFMA) mandates the BAS to do the following:

1) *serve as central information source and server of the National Information Network of the DA; and*
2) *provide technical assistance to end-users in accessing and analyzing product and market information and technology.*

EO 116 serves as the legal basis for conducting various surveys and other statistical inquiries related to the agriculture sector. In the conduct of these surveys, the law requires that the statistical system gives due regard to the confidentiality of information provided by survey respondents. For this reason, statistical reports arising from the surveys provide data only in aggregate form; and in cases where household or enterprise level data are needed, they are given without information that would reveal the respondents' identities.

On the other hand, the National Statistics Office (NSO) is the major statistical agency responsible in collecting, compiling, classifying, producing, publishing and disseminating general-purpose statistics as provided for in

Commonwealth Act (CA) No. 591. It also has the responsibility of carrying out and administering the provision of the Civil Registry Law as provided for in Act No. 3753 dated February 1931. Specifically, the NSO is tasked to:

1) *prepare for and undertake all censuses on population, agriculture, commerce and industry (Section 2, CA 591; Section 1, Batas Pambansa Bilang 72);*
2) *conduct statistical surveys by enumeration, sampling and other methods (Section 2, Batas Pambansa Bilang. 72);*
3) *compile and classify other statistical data and information (Section 2, CA 591);*
4) *conduct social and economic studies and make projections of population, agricultural production, income and the number of livestock (Section 2, CA 591);*
5) *publish and disseminate all information related to the above functions (Section 2, CA 591);*
6) *assist the National Statistical Coordination Board (NSCB), formerly the Statistical Advisory Board of the National Economic and Development Authority, in the formulation of a continuing comprehensive statistical program for the government (Section 5, Presidential Decree 418);*
7) *provide technical assistance and support to projects of other statistical agencies and institutions (Section 5, PD 418);*
8) *carry out and administer the provisions of Act No. 3753, entitled "An Act to establish a Civil Register" (Section 2, CA 591) and other laws on civil registration; and*
9) *issue authorization to solemnizing officers in accordance with the provisions of Article 7 of the Family Code of the Philippines (Executive Order No. 209 effective August 3, 1988).*

The operations and delivery of products and services of the agricultural statistical system in the Philippines benefit from the review and advice of experts groups with stakes and interests on the development of the agriculture sector, in general and of the agricultural statistics, in particular. Lodged in the National Statistical Coordination Board (NSCB), is the Inter-Agency Committee on Agriculture and Fishery Statistics (IACAFS). The IAC's main function is to serve as a forum for the discussion and resolution of issues pertaining to the generation of agriculture and fishery statistics. Under this IAC are Technical Working Groups (TWGs) by agriculture sub-sector and/or commodity.

Other than the IACAFS, the BAS is also represented in various external clusters or groupings lodged at the National Statistical Coordination Board (NSCB) and the Department of Agriculture (DA). The concerns of BAS are also raised and discussed in Technical Committees of the NSCB where the Director, Assistant Director and senior staff serve as members. Examples of these committees/groups are as follows:

Inter-Agency Committees
- *Gender Statistics*
- *Environment and Natural Resources Statistics*
- *Labor and Productivity Statistics*

Technical Committees
- *Survey Designs*
- *Poverty Statistics*
- *Statistical Standards and Classifications*
- *Price Statistics*

DA-based Groups
- *Inter-Agency Committee on Rice and White Corn*
- *Inter-Agency Committee on Livestock, Poultry and Feed Grains*
- *NAFC Committees and Sub-Committees*

It should also be noted that BAS is a major participant in the various stages in the conduct of Census of Agriculture and Fisheries (CAF).

1.2 Structure and Organization of the Major Agricultural Statistical Agencies

The Bureau of Agricultural Statistics (BAS) is a staff bureau under the Department of Agriculture (DA) and serves as the source of official statistics on agriculture. As a major player in the Philippine Statistical System (PSS), its data systems and procedures are governed by standards and such other rules or norms set in the PSS. The other major players are the National Statistics Office (NSO) which is in charge of conducting the Census of Agriculture and Fisheries (CAF) and other censuses and surveys as well as foreign trade compilation of which agriculture-based data are accessed by BAS and the National Statistical Coordination Board (NSCB) which serves as the coordinating and policy making body of the PSS.

In the Philippines, the major and the focal agency for agricultural statistics is the Bureau of Agricultural Statistics (BAS). The Bureau is headed by a Director with the following contact details:

Director Romeo S. Recide
Telephone numbers: (632) 371 2050; 371 2086
E-mail address: rsrecide@bas.gov.ph

Under the present organizational structure, there is one Assistant Director and nine (9) Division Chiefs. There are on-going efforts to rationalize the Philippine Bureaucracy and the BAS will have its share of some changes in its structure. For the details of the organizational structure of the BAS, we can refer to Figure 1.

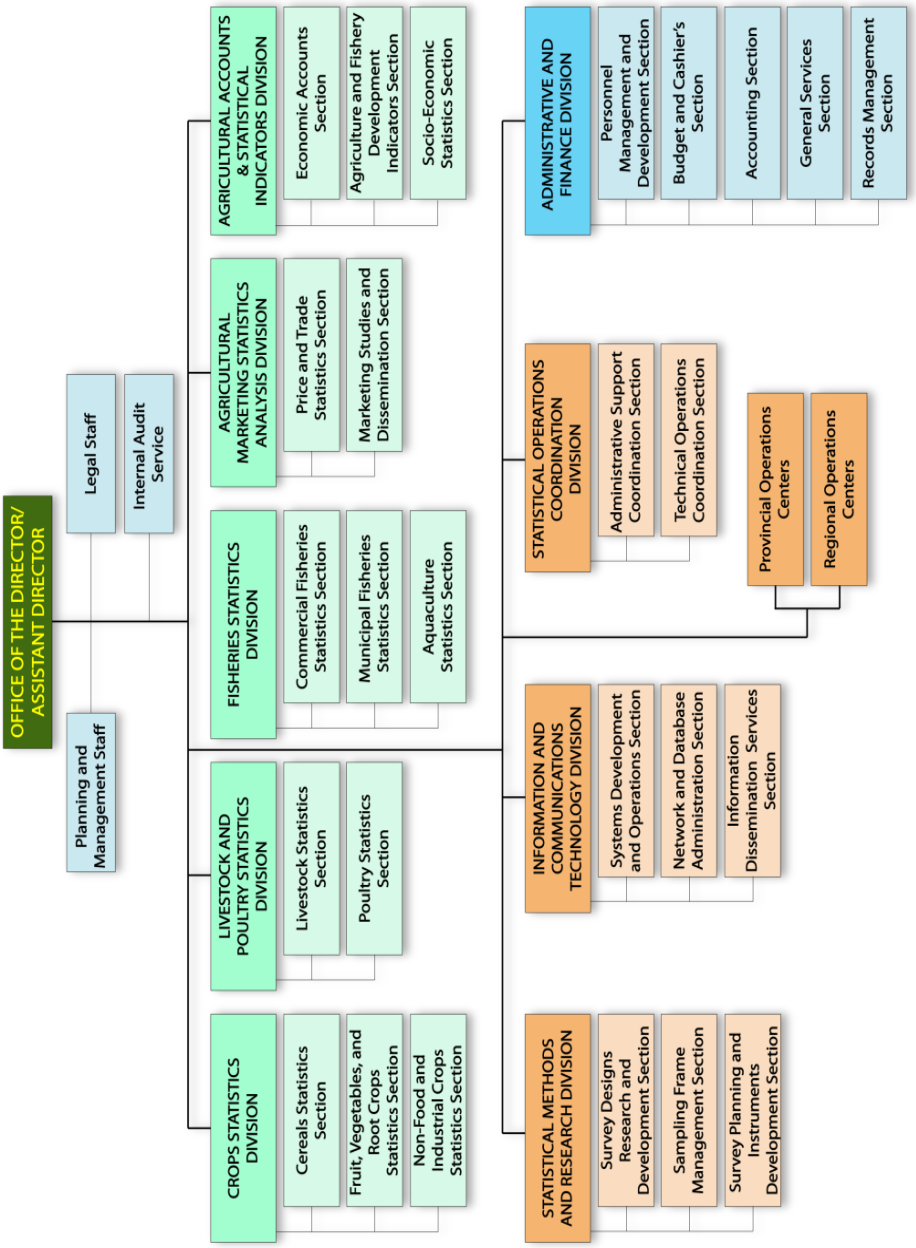

Figure 1. BAS Organizational Chart

Below is the presentation of the primary functions of the key operating units of the BAS.

a. Office of the Director/Assistant Director (OD/OAD)

The Office of the Director/Assistant Director provides the general direction, control and supervision of the BAS. It formulates, develops and oversees the implementation of plans, programs, operating standards and administrative procedures for the promotion and fulfillment of the Bureau's mission, mandates and functions.

b. Planning and Management Staff (PMS)

The Planning and Management Staff assists the management in the preparation of the Bureau's strategic, operational and project plans; prepares annual and other progress reports concerning BAS statistical operations; and maintains liaison between the Bureau, DA Planning Service and other government agencies relative to planning and management activities.

c. Legal Staff

The Legal Staff provides advice and support to the management pertaining to legal and administrative actions.

d. Agricultural Accounts and Statistical Indicators Division (AASID)

AASID is in–charge of the development and maintenance of statistical frameworks that will enhance the preparation of an integrated system of agricultural and fisheries statistics and the generation of socio-economic statistics in the agriculture and fisheries sector.

e. Crops Statistics Division (CSD)

CSD is responsible for the organization, review and analysis of crop production and production-related data as well as the timely release of crop statistics.

f. Livestock and Poultry Statistics Division (LPSD)

LPSD is responsible for the organization, review and analysis of livestock and poultry production data as well as the timely release of livestock and poultry statistics.

g. Fisheries Statistics Division (FSD)

FSD is responsible for the organization, review and analysis of fisheries production data as well as the timely release of fisheries statistics.

h. Agricultural Marketing Statistics Analysis Division (AMSAD)

AMSAD is responsible for the organization, review and analysis of agricultural marketing and market-related data, as well as the timely release of agricultural marketing statistics.

i. Statistical Methods and Research Division (SMRD)

SMRD is responsible for research and development and implementation of statistical methods to support the needs of the technical divisions by developing and improving survey designs and instruments, maintaining up-to-date sampling frames, planning and programming all survey operations, and developing and maintaining statistical standards and classification systems.

j. Statistical Operations Coordination Division (SOCD)

SOCD is responsible for the promotion of an effective and efficient operationalization and administration of the different statistical activities.

k. Information and Communications Technology Division (ICTD)

ICTD is responsible for the planning, implementation and maintenance of IT services to all organic units of BAS and for the packaging, publication and release of statistical reports and other related information on the agriculture and fisheries sectors. It will also assume the tasks of providing data for the DA's National Information Network, once it becomes operational.

l. Administrative and Finance Division (AFD)

AFD is responsible for the provision of general administration and financial management services to ensure the efficient and effective delivery of BAS' products and services.

m. Internal Audit Service (IAS)

IAS is responsible for the provision of internal audit services aimed at enhancing and strengthening financial and operational control systems within the BAS.

There are 16 Regional Operations Centers (ROCs) and 83 Provincial Operations Centers (POCs) throughout the country. They serve as the agricultural information resource centers at the regions and in the provinces, respectively.

The **Regional Operations Centers** (ROCs) exercise technical and administrative supervision and coordination of all activities and personnel of the POCs in their respective areas of jurisdiction; extend technical assistance to end-users at the regional level in accessing and analyzing agriculture and fishery information; and assume responsibility for the maintenance of the NIN at the regional level, once it becomes operational.

The **Provincial Operations Centers** (POCs) implement all statistical activities of the BAS; compile, organize and maintain up-to-date data on agriculture and fisheries sectors for the province; assist local end-users in accessing and analyzing agriculture and fishery information; and maintain the NIN at the provincial level, once it becomes operational.

As of end of December 2012, BAS is composed of Technical and Administrative Staff as follows:

Category	Central Office	Operations Centers
Technical Staff	162	483
Administrative Staff	48	27
Total	**210**	**510**

The Bureau maintains a few casual staff and job order employees to supplement the regular staff and enable itself to deliver its mandated functions.

The BAS has a total of 1087 authorized plantilla positions. In the Rationalization Plan submitted to DA, the number is reduced to 1028.

Following are the information about the budget of the BAS

A) From the regular (government) funds

Expenditure Item	2010		2011		2012	
	In Ph Pesos (000)	In US $ (000)	In Ph Pesos (000)	In US $ (000)	In Ph Pesos (000)	In US $ (000)
Personal Services	214,595	5,365	225,707	5,643	227,671	5,692
Maintenance and Other Operating Expenses	34,832	871	72,482	1,812	73,786	1,845
Capital Outlay	300	7	1,000	25	-	-
ALL ITEMS	**249,727**	**6,243**	**299,189**	**7,480**	**301,457**	**7,537**

B) From the National Programs of the Department of Agriculture

Expenditure Item	2010		2011		2012	
	In Ph Pesos (000)	In US $ (000)	In Ph Pesos (000)	In US $ (000)	In Ph Pesos (000)	In US $ (000)
Maintenance and Other Operating Expenses	35,300	882	43,200	1,080	57,631	1,441
Capital Outlay	1,000	25	5,300	132	8,300	207
ALL ITEMS	**36,300**	**907**	**48,500**	**1,212**	**65,931**	**1,648**

C) From foreign donor agencies

Source	2010		2011		2012	
	In Ph Pesos (000)	In US $ (000)	In Ph Pesos (000)	In US $ (000)	In Ph Pesos (000)	In US $ (000)
AFSIS	169	4	158	3.95	193	4.83
GOJ	-	-	23,706	593	17,922	448
TOTAL	**169**	**4**	**23,864**	**597**	**18,115**	**453**

Notes:

1) *DA national programs have their own budget which can be accessed by offices under the DA.*
2) *The exchange rate used is PhP40=US$1*
3) *AFSIS means ASEAN +3 Food Security Information System*
4) *GOJ means Government of Japan, source of funding assistance for the project "Enhancing Farmers' Capacity to Access, Analyze and Utilize Statistical Information"*

1.3 Outputs and Dissemination of Agricultural Statistics

The BAS, serves as the focal point for the dissemination of agricultural statistics. This function is largely a shared responsibility among the operating units of the BAS, both in the Central Office and the Operations Centers. Structurally, however, the mandate of disseminating statistical reports and publications rests mainly on the Information Dissemination Services Section of the Information and Communications Technology Division (IDSS -ICTD). The contact details of this unit are as follows:

Officer-in-charge	:	Engr. Jing B. Jalisan
Telephone number	:	(632) 372- 3820
Fax no.	:	(632) 372- 3820
E-mail address	:	info@bas.gov.ph webmaster@bas.gov.ph

The Philippine National Statistics Office (NSO) undertakes censuses and surveys which results get into the agricultural statistical system. It generates statistical reports containing results of the Census of Agriculture and Fisheries and other reports pertaining to agriculture and fisheries. The dissemination arm of the NSO is the Databank and Information Services Division with the following contact details:

Officer-in-charge	:	Mr. Manuel M. Rivera
Telephone number	:	(632) 714-1715
Fax no.	:	(632) 715-6430
E-mail address	:	M.Rivera@census.gov.ph

BAS Regular Statistical Reports and Publications

Title of Publication	Domains/Contents	Medium	Format	Periodicity/ Frequency	Release Calendar
Selected Statistics on Agriculture	Production, Trade, Prices, Farm Economics and Other Agriculture-related data	English	PDF, Handbook, CD	Annual	May
Performance of Philippine Agriculture					
January to December	Gross Output, Volume and Value, Growth Rates	English	PDF, Bulletin	Annual/ Quarterly	21 days after the reference year
January to March January to June January to September					45 days after the reference quarter
Rice and Corn Situation and Outlook	Production, Area, Yield	English	Memo, Bulletin	Quarterly	May/Aug/Nov/Feb
Monthly Palay and Corn Situation Report	Updated Production Forecasts	English	Memo, Bulletin	Monthly	10 days after the reference month
Rice and Corn Stock Inventory	Stocks	English	Memo, Bulletin	Monthly	10 days after the reference month
Seasonally Adjusted Rice Production and Prices	Production, Prices	English	PDF, Bulletin	Quarterly	May/Aug/Nov/Feb
Crops Statistics of the Philippines (National and Regional)	Production, Area, Yield	English	PDF, Book	Annual	August
Major Crops Statistics of the Philippines (Regional and Provincial)	Production, Area	English	Book	Annual	September
Industry Performance Reports for Carabao, Cattle, Chicken, Duck, Dairy, Goat and Swine	Inventory, Production, Trade, Prices	English	PDF, Bulletin	Annual Semi-annual	May September
Fisheries Statistics of the Philippines	Volume and Value of Production	English	PDF, Book	Annual	October

...(Continued)

Title of Publication	Domains/Contents	Medium	Format	Periodicity/ Frequency	Release Calendar
Fisheries Situation Report	Fisheries Production, Prices	English	PDF, Bulletin	Quarterly/ Annual	May/Aug/Nov January
Prices and Trade					
Producers Price Index for Agriculture	Price Index	English	PDF, Handbook	Semi-annual	September
Updates on Palay, Rice and Corn Prices	Prices	English	PDF, Memo	Weekly/ Monthly	Every Monday
Updates on Fertilizer Prices	Prices	English	PDF, Memo	Monthly	1 week after
Price Situationer of Selected Agricultural Commodities	Prices	English	PDF, Memo	Weekly/	Every Monday
Updates on Agricultural Foreign Trade Performance	Trade	English	PDF, Memo	Quarterly	Jan/Apr/Jun/Oct
Agricultural Foreign Trade Development	Trade	English	PDF, Handbook	Annual	September
BAS Media Service					
Price Bulletin	Prices	English	PDF, Bulletin	3x a week	Tues/Thurs/Sat
Market Situation	Prices and Indicators of market	English	PDF, Bulletin	Weekly	Mid-Week
Agricultural Indicators System - National, by Module					
Agricultural Structure and Resources	Land Use, Livestock and Poultry Inventory	English	Monograph	Annual	July
Agricultural Credit	Credit	English	Monograph	Annual	August
Output and Productivity	Production, Area, Yield	English	Monograph	Annual	August
Agricultural Exports and Imports	Trade	English	Monograph	Annual	October
Food Sufficiency and Security	Production, Trade	English	Monograph	Annual	October
Food Consumption and Nutrition	Food Consumption	English	Monograph	Annual	November

...(Continued)

Title of Publication	Domains/Contents	Medium	Format	Periodicity/ Frequency	Release Calendar
Population and Labor Force	Population, Labor Force, Employment Agriculture	English	Monograph	Annual	November
Gender-Based Indicators of Labor and Employment in Agriculture	Population, Labor Force, Employment in Agriculture by Sex	English	Monograph	Annual	November
Redistribution of Land	Agrarian Reform	English	Monograph	Annual	December
Economic Growth	Macroeconomic Indicators	English	Monograph	Annual	December
Inputs	Fertilizer Supply & Disposition Wages	English	Monograph	Annual	December
Prices and Marketing of Agricultural Commodities	Price Indices, Marketable Volume of Rice and Corn	English	Monograph	Annual	December
Development Trends in Agriculture: International Comparisons	Production, Macroeconomic Indicators, Trade, Land Use	English	Monograph	Biennial	May
Regional Agricultural Production Accounts	Gross Output in Agriculture, Volume and Value of Production	English	Monograph	Annual	August
Supply Utilization Accounts of Selected Agricultural Commodities	Production, Trade, Utilization	English	Monograph	Annual	November
Commodity Fact Sheets	Production, Trade, Prices, Consumption	English	Monograph	Annual	November
Trends in Agricultural Wage Rates	Sex-disaggregated data on Labor Inputs in Agriculture and Wage Rates	English	Monograph	Annual	November
Production Costs and Returns					
Updated Production Costs and Returns of Selected Agricultural *Palay and Corn (Part I)* *Selected Commodities (Part II)*	Profitability Indicators	English	Monograph	Biennial	October

Statistical Reports and Publications *(Outputs of Ad-Hoc Statistical Surveys and Related Activities)*

Title of Publication	Domains/ Contents	Medium	Format	Year Released
Survey on Food Demand for Agricultural Commodities				
Consumption of Selected Food Commodities in the Philippines (National and Regional Levels) Vol. 1	Consumption	English	Monograph	2011
Consumption of Selected Food Commodities in the Philippines (Regional and Provincial Levels) Vol. 2.1-2.16				
Consumption of Selected Agricultural Food Commodities (By Socio-Economic Class of Households) Vol. 3				
Integrated Farm Household Survey				
Income of Farm Households in the Philippines	Farm Household Income, and expenditures, Other Farm Household Characteristics	English	Monograph	1990
Farm Household Income in the Philippines				1994
Socio-Economic Characteristics of Farm Households in the Philippines, 2002-2003 (National and Regional)				2006
Some Facts and Figures on Farming Households in the Philippines, 2002-2003				2006
Land Tenure and Investments of Farm Households in the Philippines, 2002-2003				2006
Income and Expenditure of Farm Households in the Philippines, 2002-2003				2006
Costs and Returns of Palay Production by Seed Type, 2005	Cost Structure	English	Monograph	2006
Rural Sector Statistical Information System – Rural Profile	Social and Economic Statistics on the Rural Sector	English	Monograph	2005
Selected Development Indicators on Philippine Agriculture				2008

Additional Notes on Information Dissemination

Pricing policy. Until this time, all the statistical reports and publications released by the BAS are being made available for free.

Ministerial commentary. As a matter of practice, the Secretary of the Department of Agriculture, through the Press Office, schedules a press conference to announce and present the report on the performance of agriculture. This normally happens about two (2) weeks before the report on the performance of the national economy is presented in a press conference. The press conference signals the release of the report to the general public. The report on the situation and outlook for palay and corn is also presented by the Secretary at about the same time.

Changes in methodology. The agricultural statistical system does not go through frequent nor abrupt changes in methodology. If ever, the changes are documented and are made part of the report containing the results of the particular statistical activity that has gone through some changes in methodology.

Websites of major statistical agencies. Through the BAS website, the websites of all other statistical agencies can easily be accessed through its link module. The internet addresses of the major statistical agencies are as follows:

BAS	http://bas.gov.ph
NSO	http://census.gov.ph
NSCB	http://nscb.gov.ph
SRTC	http://srtc.gov.ph
BLES	http://bles.gov.ph
BSP	http://bsp.gov.ph

1.4 Dialogue with Data Users and Cooperation with International Organizations

The conduct of dialogue with the users of agricultural statistics has already been mainstreamed in the BAS.

In the Central Office, internal and external fora are being held and during these occasions, the needs of the clients and stakeholders are deliberated on. The Users' Forum deliberations are expected to end with some resolutions regarding the supply and demand for statistics.

The BAS is also benefiting from cooperation with international organizations. The Bureau has been a beneficiary of the World Bank's Trust Fund for Statistical Capacity Building. This Grant enabled the BAS to establish the Rural Sector Statistical Information System and to pioneer a Community Level Statistical Information System.

The BAS is a partner of the Food and Agriculture Organization (FAO) of the United Nations in the promotion of quality agricultural statistics. The FAO provided a grant to the BAS for the establishment of an Agricultural Indicators System which it has since improved and maintained. Through another FAO grant, the BAS has demonstrated the feasibility of establishing a farm record-based data collection and community level processing and analysis to promote data utilization.

The Asian Development Bank (ADB) has also been a donor towards the improvement of the agricultural statistical system in the country.

The BAS represents the Philippines in the ASEAN +3 Food Security Information System (AFSIS). The AFSIS provides some financial support for the establishment of the AFSIS in the Philippines.

The BAS has been granted funds by the Government of Japan, through the 2KR Project of the National Agricultural and Fishery Council (NAFC), to undertake a three-year project on "Enhancing Farmers' Capacity to Access, Analyze and Utilize Statistical Information". This project is aimed at improving farmers' productivity, efficiency and income through the institutionalization of improved and sustainable capacities on operational and financial farm management and planning.

Recently, the Technical Cooperation Programme (TCP) of the FAO has approved the project, "Establishment of the Food Security Information System in the Philippines (PhilFSIS)". The PhilFSIS is envisaged as a web-based information system on food security that would enhance food security planning, implementation and evaluation through improved organization, analysis and dissemination of relevant data and information in the Philippines. Specifically, it will be a one-stop-shop information system with the aim of storing, retrieving, sharing and analyzing statistical data and dissemination of relevant data, reports and other information related to food security in the country at the national and sub-national levels.

1.5 Strategic Framework

The BAS' plans and programs are formalized by its Strategic Plan for 2013 to 2015. The Bureau continues to pursue its main strategic directions of being a statistical organization that:

- *delivers quality products and services that satisfy its clients;*
- *attracts, develops and maintains a competent workforce and*
- *adopts strategic management in addressing its mandates, mission and vision.*

In support of the first strategic direction, the BAS is committed to undertake the following strategic actions:

a. Conduct of regular national surveys and other statistical activities for generating statistics on agriculture and fisheries which include but not limited to production, prices and farm economics;
b. Pursuit of the statistical research and development agenda for the agricultural statistical system;
c. Enhancement in the use of statistical frameworks for improving the BAS statistical products and services;
d. Enhancement of the review process to sustain the improvement of the BAS data system;
e. Optimum and rational adoption of ICT-based strategies;
f. Development and maintenance of an effective and efficient information service of the BAS; and
g. Enhancing the capacity of stakeholders in accessing and analyzing agricultural information.

To move along the second strategic direction, the BAS takes on the following strategic actions:

a. Effective implementation of the following: Personnel Selection Plan (PSP), the Program on Awards and Incentives for Service Excellence (PRAISE), the Grievance Machinery, and Committee on Decorum and Investigation (CODI);
b. Transforming the Bureau into a learning organization;
c. Development and implementation of a career development program for BAS personnel;
d. Rationalizing deployment of BAS personnel;
e. Mainstreaming activities that enhance personnel welfare; and
f. Enhancing the Bureau's physical working environment.

In pursuing its third strategic direction, the BAS focuses on the following strategic actions:

a. Advocacy and monitoring of the implementation of a long term Agricultural Statistical Development Program (ASDP);
b. Institutionalization of a formal strategic planning at the national and sub-national levels;
c. Sustaining a review system of organizational structure, strategy and culture;
d. Strengthening the BAS linkages with all stakeholders;
e. Enhancement of effective governance principles and practices across all operations; and
f. Mainstreaming of the plan for marketing and promotion of the Bureau's products and services.

CHAPTER 2

MAJOR DOMAINS AND SELECTED STATISTICS AND INDICATORS FOR THE AGRICULTURE SECTOR

2.1 List of Major Domains and Selected Statistics and Indicators

Domain	Statistics/Indicators
Production	
..*Crops*	Palay and Corn: Volume of Production Palay and Corn: Value of Production Rice and Corn: Monthly Total Stock Inventory Other Crops: Volume of Production Other Crops: Value of Production Other Crops: Number of Bearing Trees/Hills/Vines
..*Livestock and Poultry*	Livestock and Poultry: Volume of Production Livestock and Poultry: Value of Production Livestock Slaughtered in Slaughteredhouses/Poultry Dressed in Dressing Plants Livestock and Poultry Inventory
..*Fisheries*	Fisheries: Volume of Production by Subsector Fisheries: Value of Production by Subsector Commercial Fisheries: Volume of Production by Species Commercial Fisheries: Value of Production by Species Marine Municipal Fisheries: Volume of Production by Species Marine Municipal Fisheries: Value of Production by Species Inland Municipal Fisheries: Volume of Production by Species Inland Municipal Fisheries: Value of Production by Species Aquaculture: Volume of Production by Species Aquaculture: Value of Production by Species
..*Macroeconomic Statistics/ Indicators*	Gross Domestic Product Gross Value Added in Agriculture, Hunting, Forestry and Fishing Value of Production in Agriculture by Subsector
Trade	Agricultural Exports: Quantity and Value Agricultural Imports: Quantity and Value Quantity and Value of Fertilizers Imports
Food Consumption	Food Balance Sheet Supply Utilization Accounts

...(Continued)

Domain	Statistics/Indicators
Food Consumption	Annual Per Capita Consumption of Selected Agricultural Commodities Self-Sufficiency Ratio of Selected Agricultural Commodities Import Dependency Ratio of Selected Agricultural Commodities Shares of Food to Total Family Expenditures
Prices	Agricultural Commodities: Farmgate Prices Agricultural Commodities: Wholesale Prices Agricultural Commodities: Retail Prices Producer Price Index for Agriculture Consumer Price Index for All Income Households Inflation Rate for All Income Households
Fertilizer and Pesticides	Fertilizers: Dealers' Prices Pesticides: Dealers' Prices by Farm Chemical Palay: Estimated Inorganic Fertilizer Use Corn: Estimated Inorganic Fertilizer Use Fertilizer: Supply and Disposition
Land Use	Palay and Corn: Area Harvested Other Crops: Area Planted/Harvested Irrigated Area by Type of Irrigation System Area of Farms by Land Use
Labor and Employment	Employment by Major Industry Group Agricultural Wage Rates of Farm Workers Total Employment Employment in Agriculture
Costs and Returns	Updated Average Production Costs and Returns
Others	Number of Equipment Agricultural Production Loans Average Annual Rural Income Average Annual Income of Farm Households Average Annual Expenditures of Farm Households Government Expenditures in Agriculture

2.2 Metadata for each of the Major Domains

2.2.1 Production

A. Crops

2.2.1.1a Concepts, Definitions and Classifications

Bearing Trees Per Hectare – is the number of bearing plants/ hills/ trees per hectare.

Bearing Trees/Bearing Hills/Bearing Vines – refer to the number of trees/hills/vines where harvesting has been made in the past but may or may not have borne fruits or productive during the reference period due to cyclical production pattern of the crop. Hills apply to banana. Vines apply to pepper and grapes.

Crop Estimates (Palay and Corn) – refer to actual harvests in the recent quarter, prior to release of data.

Crop Forecasts (Palay and Corn)- refer to probable harvests in the next two (2) quarters, current quarter forecasts are based on standing crop and next quarter forecasts are based on farmers' planting intention.

Crop Production- is the quantity produced and actually harvested for a particular crop during the reference period. It includes those harvested but damaged, stolen, given away, consumed, given as harvesters' and threshers' shares, reserved etc. Excluded are those produced but not harvested due to low price, lack of demand and force majeure or fortuitous events, etc.

Industrial Crops- are crops that are used as inputs to other industries.

Major Crops- refers to the top 19 crops in the Philippines, other than palay and corn which collectively account for more than 60 percent of the total volume of crop production. These include coconut, sugarcane, banana, pineapple, coffee, mango, tobacco, abaca, peanut, mongo, cassava, sweet potato, tomato, garlic, onion, cabbage, eggplant, calamansi and rubber.

Minor Crops- are all the remaining crops other than the major crops. This group accounts for about 40 percent of the total crop production.

Non-Food Crops- are crops other than those used for food consumption. These are crops grown for their aesthetic values such as ornamental plants and cut-flowers. These also include agriculture-derived products such as rice hay and coconut leaves.

Permanent/Perennial Crops- are crops which occupy the land for a long period of time and do not need to be replaced after each harvest such as fruit trees, shrubs, nuts, etc. These crops may be productive or fruit-bearing crops. Examples are: avocado, coffee, coconut and other fruit trees.

Priority Crops- the identified national banner crops and various regional priority crops of the then Key Commercial Crops Development Program (KCCDP), now High Value Crops Development Program (HVCDP) and crops under the Key Commodity Road Maps of the Department of Agriculture, which are being developed because of their industrial and commercial potentials.

Root Crops- are crops with well-developed underground edible roots. They are classified into roots and tubers. Roots, which are more starchy and rich in carbohydrates, include gabi, ubi and white potato. Tubers include beets, radish, carrots and turnips.

Temporary Crops- are crops which are grown seasonally and with growing cycle of less than one year and which must be sown and planted again for production after each harvest. (Some crops thrive beyond one year.)

Vegetable Crops- are mostly temporary crops which are either classified agronomically as such or based on purpose for which they are used, like jackfruit which on its young stage, is classified as vegetable.

White Corn- is corn grown and used mainly for human consumption, and manufacture of corn by-products such as cornstarch, corn oil, syrup, dextrins, glucose, gluten, etc.

Yellow Corn- is corn used mainly as feed grains; includes all types of corn other than white.

Yield- is an indicator of productivity derived by dividing total production by the area harvested.

Yield per Bearing Tree- is an indicator of productivity for permanent crops derived by dividing total production by the total numbers of bearing trees. The unit used is kilogram per bearing tree.

Classifications

The BAS data systems for production are compliant with the existing statistical standards and classifications used in the Philippine Statistical System (PSS).

2.2.1.2a Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Volume of palay and corn	National and sub-national levels	1970	Palay and Corn Production Survey (PCPS)	BAS
Value of palay and corn production	National and sub-national levels	1988	Palay and Corn Production Survey (PCPS)	BAS
			Farm Prices Survey (FPS)	BAS
Palay and corn stocks inventory	National and sub-national levels	1980 1990	Palay and Corn Stocks Survey 1 (PCSS 1)	BAS
Volume of crop production *(other than palay and corn)*	National and sub-national levels	1982 (national level) 1990 (sub-national level)	Crops Production Survey (CrPS)	BAS
			Records from concerned agencies for the following crops:	
			Sugarcane -*for canes milled for centrifugal sugar*	SRA
			Fiber Crops	FIDA
			Cotton	CODA
Value of crop production *(other than palay and corn)*	National and sub-national levels	1988	Crops Production Survey (CrPS) Farm Prices Survey (FPS)	BAS

** The year cited here refers to the start of available data series.*

2.2.1.3a Data Processing, Estimation and Revision Methodology

Volume of Palay and Corn Production

Data from the Palay and Corn Production Survey (PCPS) are processed using two (2)-customized Windows-based systems developed by the Information and Communications Technology Division (ICTD). The two (2) customized systems, Palay Production System (PPS) for palay and Corn Production Survey (CPS) for corn, were developed using the software Census and Survey Processing System version 4.1 (CSPro 4.1).

Decentralized processing is applied for both the PPS and CPS. At the Provincial Operations Center (POC), processing activities include encoding of data from survey questionnaires; computerized editing, completeness check, generation of expansion factor and generation of output tables. These procedures are the same for both PPS and CPS.

Prior to data encoding, the accomplished survey returns are manually edited and coded. Manual editing involves the checking of data items based on pre-set criteria, data ranges, completeness and consistency with other data items in the questionnaire. Coding is the assignment of alpha-numeric codes to questionnaire items to facilitate data entry.

To validate, encoded data are subjected to computerized editing using a customized editing program. The editing program takes into consideration the validation criteria such as validity, completeness and consistency with other data items. This activity is done to capture invalid entries that are overlooked during manual editing.

An error listing is produced as output of the process. The errors reflected in said lists will be verified vis-à-vis the questionnaires. The data file will be updated based on the corrections made. Editing and updating are performed iteratively until a clean, error-free data file is generated.

Completeness check is done to compare the data file against a master file of barangays to check if the sample barangays have been completely surveyed or not. This activity is done after a clean, error-free data file is generated.

A program generating the appropriate household weights or correction factor is run using the clean data file. The generated household weights will then be used in the estimation.

Output table generation is performed only after the activities of completeness check and generation of correction factor have been done. The PPS and CPS systems generate 12 provincial output tables. Soft copies of provincial data, specifically the clean data and the barangay master file, are submitted to the ICTD for national consolidation. Hard and soft copies of the provincial reports are submitted to the Crops Statistics Division (CSD) for the National Data Review (NDR).

Estimation and/or Compilation Procedure

Each replicate (represented by the sample psu) in a stratum will yield an independent estimate for the stratum. Hence, there will be four (4) independent estimates and the mean of these four (4) estimates will be the unbiased estimate for the stratum.

$$x'_{khi} = \left(\frac{P_{kh}}{P_{khi}}\right).\left(\frac{N_{khi}}{n_{khi}}\right).w_{khi} \cdot \sum_{j-1}^{n_{khi}} x_{khij}$$

$$= b_h \,.R_k.x_{hi}$$
$$= 4\,.R_k\,.x_{hi}$$

where:

x_{khij} = *value obtained from the* j^{th} *sample farm household of the* j^{th} *barangay in the* h^{th} *stratum of the* k^{th} *province;*

x_{hi} = *weighted total for the* j^{th} *barangay in the* h^{th} *stratum;*

$$= w_{khi} \cdot \sum_{j-1}^{n_{khi}} x_{khij}$$

and

w_{khi} , n_{khi} , P_{kh} , *and* b_h *are the ones defined in the sampling design*

The unbiased estimate of total for the hth stratum is simply the mean of the four (4) independent estimates, that is,

$$x'_{kh} = \left(\frac{1}{b_h}\right).\sum_{i-1}^{b_k} x'_{khi}$$

$$= R_k\,.x_h$$

where x_h *is the weighted total for the* h^{th} *stratum.*

a. Provincial Estimates

Estimates of total for the province are obtained simply by aggregating all the stratum estimates in the province. Hence, the estimate of total for the kth province is given by

$$x_k^{'} = \sum_{h-1}^{H_k} x_{kh}^{'}$$

where H_k is the total number of strata in the k^{th} province (domain) and Its variance is estimated by the sum of stratum variances, that is,

$$v\,(x_k^{'}) = \sum_{h-1}^{H_k} v(x_{kh}^{'})$$

b. Regional and National Estimates

Estimates of total for the region and for the whole country, together with their respective variances, are obtained in the same manner as those for the province, that is, by aggregating relevant stratum estimates. These may also be obtained by aggregating relevant provincial estimates (for the region) and aggregating relevant provincial estimates (for the whole country).

Revision of Estimates

The BAS has adopted a policy on revision of estimates approved under the NSCB Resolution No.7 dated May 18, 2005. It basically informs producers and users of agricultural statistics generated by the BAS that revision of quarterly estimates on the agricultural production, prices and related statistics be limited to the immediately preceding quarter and for the past three (3) years with quarterly breakdown to be done only during May of the current year. This happens when additional statistics and/or indicators are made available to support the change in the original data.

Volume of Crop Production other than Palay and Corn Estimation and/or Compilation Procedure

Percent change for each type of farm for any given commodity (crops other than palay and corn) is computed as follows:

For small farms,

$$\%change_{s=} \left(\frac{\sum_{i-1}^{n} P_{sci} - \sum_{i-1}^{n} P_{spi}}{\sum_{i-1}^{n} P_{spi}} \right) * 100\%$$

where:

$\%change_s$ *- percent change for small farms*

P_{sci} - *actual level of production / area/ number of bearing trees for the current period reported by the* j^{th} *sample farmer*

P_{spi} - *actual level of production / area/ number of bearing trees for the same period last year reported by the* j^{th} *sample farmer*

n - *number of sample farmers*

For large farms/plantations,

$$\%change_i = \left(\frac{\sum_{i-1}^{m} P_{lci} - \sum_{i-1}^{m} P_{lpi}}{\sum_{i-1}^{m} P_{lpi}} \right) * 100\%$$

where,

$\%change_i$ *- percent change for large farms / plantations*

P_{lci} - *actual level of production / area / number of bearing trees of the* j^{th} *sample large farm/plantation for the current period*

P_{spi} - *actual level of production / area / number of bearing trees of the* j^{th} *sample large farm/plantation for the same period last year*

m - *number of sample large farms / plantations*

Each type of farm has a corresponding weight which is determined as follows:

For large farms/plantations,

$$w_l = \frac{A_i}{A_p}$$

where,

w_l *- weight for large farms / plantations*

A_i *- total area of large farms in the province*

A_p - *total area of small and large farms in the province*

For small farms,

$$w_s = \frac{A_s}{A_p}$$

where,

w_s - *weight for small farms*

A_s - *total area of small farms in the province*

A_p - *total area of small and large farms in the province*

The overall percent change for the province is computed as the sum of the weighted percent change for each type of farm, that is

$$\%change = (w_s * \%change_s) + (w_l * \%change_l)$$

The estimated total production/area/number of bearing trees for the current period for the province, denoted by Ec, is computed as

$$E_c = E_p \left(1 + \frac{\%change}{100\%}\right)$$

where,

E_p - *estimated total production / area / number of bearing trees for the same period last year, i.e. the base data*

$\%change$ - *overall percent change for the province*

Estimates of total production/area/number of bearing trees for the region are obtained by aggregating the estimated total production/area/number of bearing trees of the provinces within the region. Estimates at the national level are the sum of the estimates of the regions.

Data Processing

The existing Crops Compilation System (CCS) adopted by BAS is in MS Excel-based template that utilizes the links and protection commands. The system electronically consolidates the different data sets from the provinces to the region up to the national level. An identical and independent system is provided for each of the two sub-commodity groups which are classified further into major and other crops so that three data files were created to accommodate these crops. The major crops are contained in two data files, one for production and the other file for area and bearing trees. A third data file which is identical for both sub-commodity groups is provided for other crops. Production, area and number of bearing trees were lumped in this

data file. All the worksheets provided are protected except in cells for the reference periods covered in each reporting period. Updating the links and formula is limited in these reference periods. Thus, the need to use the updated file intended for the specific reporting period. Otherwise, the data in the updated files could not be captured which could result in underestimation of the regional and national totals.

The POC files comprise several worksheets by reference period and another worksheet consolidates the data in all reference periods by crop. The data series in the system is from 1999 to the most current period. For the current year, a column is provided for the preliminary estimates and another column is for the final estimates.

Preliminary estimates are reported in the current reference period and final data for the previous reference period. POCs encode the provincial estimates in the Crops Compilation System, which electronically computes the totals and the year-on-year percent changes of the reference period.

The compiling system also electronically computes the planting density and yield by crop. This shall facilitate the checking of the computed levels against the parameters by crop. Hard copies of the corresponding worksheets are simultaneously submitted to the ROC and the Central Office as advanced copies and ready reference. Aside from the hard copy, the POCs provide the ROCs with the soft copy to electronically generate the regional total.

The ROC compiling system also comes in three files. The files have worksheets corresponding to the POCs' files. Additional worksheets are provided as summary worksheets by reference period showing the data by province to facilitate comparison and summarization of reasons. Another summary worksheet presents the electronically computed planting density and yield by crop showing the data by province. No encoding is done at the ROC except for the summary of the reasons for changes. Other crops include production; area and bearing trees in one file. The regional total and the corresponding percent change for all crops and data items are electronically computed using the links command and formulae. The ROC takes note of the problematic entries and observations on the submitted reports. These are referred back to the concerned POC for appropriate action prior to submission to the Central Office.

The central compiling system is maintained at the Central Office. The data submitted in soft copy are copied on the corresponding worksheets of the central compiling system. This ensures that any unauthorized data

adjustment in the submitted files would not corrupt the main file. Otherwise, the data in the main file would become inconsistent to released data. Pasting the data on the main file is done in several workstations and accessed through the Local Area Network (LAN) facility.

The system electronically generates the national level data. As an added measure and for quick reference, upon the release of data, summary tables are generated deleting the links. As done at the ROC, the problematic entries and observations on the provincial and regional reports are referred back to the concerned reporting unit for appropriate action.

Apart from the provincial and regional files, the Central Office also maintains commodity files. Separate files are maintained for the data series on production, area and bearing trees by crop. From these files, data on planting density and yield by commodity are generated for use in the data review.

For crops covered by specialized agencies of the government, the scheme varies. For sugarcane, the data for centrifugal sugar in ton canes are obtained from the Sugar Regulatory Administration (SRA). These are from the reports of sugar mills operating in the country. The BAS Operations Centers collect data on production of canes for chewing, basi and muscovado through the quarterly Crops Production Survey. These two data sets are incorporated to account for the production of sugarcane.

In the case of fiber crops, the national total is the summary comprising the data from both the Fiber Industry Development Authority (FIDA) and BAS. Data of FIDA are from the baling stations while the data of provinces with no baling stations are derived from the Crops Production Survey of the BAS.

For cotton, the Cotton Development Administration (CODA) provides the Bureau with data from its monitoring system. This includes the 10 CODA monitored provinces which are also covered in the BAS Crops Production Survey. Meanwhile, for coconut, the estimates are results of the reconciled data of the Quarterly Coconut Production Survey (QCPS), a joint undertaking of the Philippine Coconut Authority (PCA) and BAS, and the Crops Production Survey of BAS.

Estimates for tobacco are obtained from the Quarterly Crop Production Survey of the BAS. In the review and analysis of data, the National Tobacco Administration (NTA) is consulted and it also provides auxiliary information, which serves as inputs for data checking.

Palay and Corn Households Stocks

Data Processing

Similarly with the PCPS, the processing of returns of the Palay and Corn Stock Survey (PCSS1) is decentralized. In the Operations Centers, this processing is a combination of manual and Excel-based processing systems developed at the Cereals Statistics Section. The provincial estimates are summarized using the prescribed format and forwarded to the Central Office for review and consolidation.

Estimation and/or Compilation Procedure

The provincial estimate is given as follows:

$$\hat{Y}_p = \sum_{jki}^{n} \left[\left(\frac{\sum_{k-1}^{n} yijk}{nj} \right) N_j \right]$$

where:

$\hat{Y}_p$ - *estimated total stock in the province for* j^{th} *type of cereal during the specified period*

Y_{ijk} - *observation from the* k^{th} *sample in the* j^{th} *category (farming or non-farming) for the* j^{th} *type of cereal*

n_j - *number of responding households samples for in the* j^{th} *category*

N_j - *total number of households in the* j^{th} *category*

The estimate of the total stock in the province is generated as follows:

a. for each type of cereal, multiply the average stock held by the reporting households by the total number of households under the farming and non-farming category; and then
b. for each type of cereal, add the estimated stock held by the farming and non-farming households.

The expansion factor of the PCSS1 is based on the 1991 CAF number of farming and non-farming households which is updated in July every year using the mid-year population projections.

The rice and corn grain equivalents of the estimated palay and corn stocks are computed using the formula below:

$$rice\ equivalent = estimated\ palay\ stock * 0.65$$
$$corn\ grain\ equivalent\ = \frac{corn\ grits}{0.68}$$

B. Livestock and Poultry

2.2.1.1b Concepts, Definitions and Classifications

Slaughterhouse (also, Abattoir)- refers to the premises that are approved and registered by a controlling authority in which food animals are slaughtered and dressed for human consumption.

Slaughterhouse, Locally Registered- is an slaughterhouse that has not satisfied the set of criteria for accreditation by the National Meat Inspection Service (NMIS) but allowed by the Local Government Units (LGUs) i.e. city/municipal government institution to operate as such.

Slaughterhouse/Poultry Dressing Plant, Accredited - is a slaughterhouse/poultry dressing plant that has satisfied the set of criteria for accreditation by the National Meat Inspection Service (NMIS) i.e. triple A (AAA), double A (AA) and A.

Slaughterhouse /Poultry Dressing Plant, Accredited, Single A (A)- is a slaughterhouse with facilities and procedures of minimum adequacy for making the meat of livestock and fowls slaughtered suitable for distribution and sale only within the city or municipality where the slaughterhouse is located.

Slaughterhouse /Poultry Dressing Plant, Accredited, Double A (AA)- is a slaughterhouse with facilities and operational procedures sufficiently adequate for slaughtering livestock and fowl, making the meat suitable for sale in any local or national market.

Slaughterhouse /Poultry Dressing Plant, Accredited, Triple A (AAA)- is a slaughterhouse with facilities and operational procedures appropriate for slaughtering livestock and fowl, making the meat suitable for sale in any domestic or international market.

Animal Inventory (also, Animal Population)- refers to the actual number of domesticated animals present in the farm at a specific reference date.

Animals on the Milk Line- animals that are being milked or which are producing milk at a specific date.

Backyard Farm/Raiser- refers to any farm or household raising at least one head of animal or bird and does not qualify as a commercial farm.

Beginning Inventory- is the number of animals existing at the beginning of the reference period.

Commercial Livestock Farm/Operator- refers to any livestock operator or farm which operation satisfies at least one of the following conditions: a) at least 21 head of adults and zero young b) at least 41 head of young animals c) at least 10 head of adults and 22 head of young animals.

Commercial Poultry Farm/Operator- refers to any poultry operator or farm which operation satisfies at least one of the following conditions: a) 500 layers or 1,000 broilers b) 100 layers and 100 broilers if raised in combination c) 100 head of duck regardless of age.

Dairy- is the branch of agriculture concerned with the production and processing of milk and its by-products.

Dairy Animals- refer to animals producing milk such as carabao/buffalo, cattle and goat for human consumption. These also include dual purpose animals.

Dairy Enterprise- is an entity of any size operated /managed for dairying purposes. It may be a farm where dairy animals are kept for milk production. It can be classified into: communal, corporation, cooperative, individual and institutional.

Dairy Farm- refers to a farm with significant number of animals with dairy bloodline - whether for milk or dairy animal production.

Dressing Plant- refers to the premises that are approved and registered by the controlling authority in which poultry are dressed for human consumption.

Dressing- is the progressive separation on the dressing floor of food animal into a carcass (or sides of a carcass), offals and inedible by-products. It may include the removal of the head, hide, feathers/hairs, and offals.

Ending Inventory- refers to the number of animals existing at the end of the reference period.

Livestock- refers to farm animals kept or raised for consumption, work or leisure. In general, poultry is separated as a distinct group of farm animals. For purposes of censuses and surveys, livestock covers only those that are tended and raised by an operator.

Livestock Farmer/Raiser- is an individual or group who owns and raises animals and sells directly at the market or to the buyer who purchases them for marketing, fattening, breeding or other purposes.

Livestock Production- refers to the volume of indigenous (locally-raised) animals disposed for slaughter plus animals exported or shipped-out for slaughter both in liveweight equivalent.

Meat Establishment- refers to premises such as slaughterhouse, poultry dressing plant, meat processing plant, meat cutting plant, cold storage warehouse and other facilities in which food animals or meat products are slaughtered, prepared, handled, packed or stored.

Meat Production- refers to the aggregate volume of meat recovered (excluding offals) from all animals/birds of indigenous and foreign origin (shipped-in), slaughtered within the local/national territory.

Milk Production- refers to the aggregate volume of milk produced by dairy animals that is delivered to cooperatives, sold to others and consumed at home.

Poultry- is a collective term for all domesticated avian for the purpose of food consumption or, the carcass of such avian dressed/processed for human consumption. Fowl is a term used to refer to a specific group of avian sharing common anatomical characteristics, e.g. chicken, turkey.

Slaughter- is butchering of animals for the purpose of human consumption.

Slaughter in Other Areas- means slaughtering/dressing of animals in places without permanent slaughter facility, e.g., farm/household, markets, talipapa and the like.

Classifications

The BAS data systems for production use or conform with the existing statistical standards and classifications in the Philippine Statistical System (PSS).

2.2.1.2b Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Volume of Livestock and Poultry Production	National level	1980	Backyard Livestock and Poultry Survey (BLPS)	BAS
			Commercial Livestock and Poultry Survey (CLPS)	
	Regional level	1997	Backyard Livestock and Poultry Survey (BLPS)	BAS
			Commercial Livestock and Poultry Survey (CLPS)	
Dairy Production	National level	1981	Semi-annual Survey of Dairy Enterprises/ Farm	BAS
Value of Livestock and Poultry Production	National and sub-national levels	1985	Backyard Livestock and Poultry Survey (BLPS)	BAS
			Commercial Livestock and Poultry Survey (CLPS)	
			Semestral Survey of Dairy Enterprises/ Farm	
	Regional level	1985	Backyard Livestock and Poultry Survey (BLPS)	BAS
			Commercial Livestock and Poultry Survey (CLPS)	
			Farm Prices Survey (FPS)	
Livestock and Poultry Inventory	National level	1950	Backyard Livestock and Poultry Survey (BLPS)	BAS
Livestock and Poultry Inventory	National and sub-national levels	1980	Commercial Livestock and Poultry Survey (CLPS)	BAS

…(Continued)

Statistics/	Coverage	Availability*	Data Source	Responsible
Animals Slaughtered in Slaughterhouses and Dressed in Poultry Dressing Plants	National and sub-national levels	1984	Survey of Slaughterhouses and Poultry Dressing Plants	BAS

**The year cited here refers to the start of available data series.*

2.2.1.3b Data Processing, Estimation and Revision Methodology

Backyard Livestock and Poultry

Data Processing

Survey returns of BLPS are processed manually using MS Excel Application. The output tables generated reflect provincial totals for each data item. These outputs are summarized manually into a validation sheet format called the "Supply Disposition Table" where the PASOs acting as data analysts together with the "livestock point person" validate the provincial summary data using the "S-D Technique". During this stage of data validation at the provincial level check data and other secondary data such as inflow/outflow of animals, per capita consumption, damage/occurrence of pests/diseases are made available as indicators to assess the consistency of survey results with the current/situation of the industry.

The ROCs are responsible for consolidating the provincial validation sheets/S-D tables to come up with the Regional Summary which is also subject to review and validation. The Regional summary contains the breakdown of provincial S-D worksheet.

At the Central Office, compilation of the summary tables by region and by province is done by respective commodity specialists in order to come up with the national S-D worksheet that is ready for review and validation. Also, check data/secondary data are made available as inputs to data review and analysis.

Estimation and/or Compilation Procedure

a. Provincial Estimates

The provincial estimate is given as follows:

$$\hat{Y}_{ip} = \sum_{j=1}^{2} N_j \sum_{k=1}^{n_j} \frac{y_{ijk}}{n_j}$$

where:

$\hat{Y}_{ip}$ - *estimated total number of head of the j^{th} animal typein the p^{th} province during the reference period;*

y_{ijk} - *observation from the k^{th} sample household in the j^{th} category reporting the j^{th} animal type;*

n_j - *number of responding households in thej^{th} category*

N_j - *total number of households in the j^{th} category*

J - *number of household in the categories that is,*
one (1) = farming household;
two (2) = non-farming household

b. Regional and National Estimates

The regional and national estimates for the ith animal type are obtained by summing up all the estimates for that animal type across all provinces in the region and all provinces across all regions, respectively.

Commercial Livestock and Poultry

Data Processing (Swine and Broiler)

A computerized system called the Quarterly Survey of Commercial Swine Farm System (QSCSFS) and Quarterly Survey of Commercial Broiler Farm System (QSCBFS) were developed for the use of processors to generate the swine and broiler information. After preparing the questionnaire for data capture, the use of the QSCSF and QSCBF systems are the second activity in the computerized data processing. It involves procedures like system installation, accessing the system, data entry, updating of master file and table generation.

This documentation serves as a data processing guide for the QSCSF and QSCBF systems developed under the Census Survey Processing (CSPro) software.

The data generated by Census Survey Processing (CSPro) software for both swine and broiler should be an input in coming up with an S-D worksheet which shall be subject to review and validation using the same approach as described in the BLPS.

On the other hand, processing of survey returns for other livestock and poultry, i.e. cattle, carabao, goat, duck, and chicken layer is being done manually using MS Excel application as with the BLPS.

a. Provincial Estimates

Estimation of totals for each of the provinces covered in the survey depends on whether the farms are completely enumerated or sampled. For provinces where farms are completely enumerated (denoted by p'), the provincial total is obtained by summing up all the observations for the province that is,

$$X_{p'} = \sum_{c=1}^{N_{p'}} X_{p'c} + \sum_{j=1}^{N_{p'm}} X_{p'mj}$$

where:

$X_{p'}$ - *total for the province* p'

$X_{p'mj}$ - *observation for the* j^{th} *farm located in the province* p' *whose information are gathered from its Metro Manila (MM) office*

$N_{p'm}$ - *total number of farms located in the province* p' *but whose information are gathered from its MM office.*

$X_{p'c}$ - *observation from the* c^{th} *farm in the province* p'

$N_{p'}$ - *total number of farms in the province p'*

The total for Metro Manila (MM) includes observations for all farms located in MM only. Farms located in the province outside of MM but whose data are gathered from their MM office will be accounted for in the province where their farms are located.

For provinces where sampling is employed, (denoted by p), the estimated provincial total is obtained by direct expansion of the farm level observations within a stratum, then aggregating the stratum estimate across all strata; that is

$$\hat{x}_{p=} \sum_{s-1}^{H} \hat{x}_{ps}$$

where:

$\hat{x}_{ps}$ - *estimated total for the s^{th} stratum of the p^{th} province, that is,*

$$\hat{x}_{ps=} \frac{N_{ps}}{n_{ps}} \sum_{i=1}^{n_{ps}} x_{psi}$$

x_{psi} - *observation from the j^{th} sample farm in the s^{th} stratum in the p^{th} province*

N_{ps} - *total number of farms in the s^{th} stratum of the p^{th} province*

n_{ps} - *number of sample farms in the s^{th} stratum of the p^{th} province*

H - *number of strata in the p^{th} province*

b. Regional and National Estimates

Estimates at the regional and national levels are made up of two components: totals for provinces where complete enumeration is employed, and estimates for the provinces where sampling is employed. Thus, the regional-level estimate is expressed as:

$$\hat{x}_{reg} = x_{p'} + {}'\hat{x}_{p}$$

While the national-level estimate is given by the formula:

$$\hat{x}_{phil} = X_{p'} + \hat{x}_{p}$$

Dairy Production

Data gathered from the Semi Annual Dairy Surveys is done manually using the MS Excel Application. This software was used for data entry and generation of output tables.

a. Provincial Estimates

Estimated total milk production for a province:

$$\hat{Y}_{p=}\ M_p\ \frac{1}{n_p}\sum_{i=1}^{n_p}\frac{y_{pi}}{m_{pi}}$$

Estimated total number of animals per category for a province:

$$\hat{A}_p\ =\ N_{p^{P_p}},\ P_p\ =\ \frac{a_p}{k_p}$$

b. National Estimates

Estimated total milk production in the Philippines:

$$\hat{Y} = M\frac{1}{l}\sum_{p=l}^{l}\frac{1}{n_p}\sum_{i=1}^{n_p}\frac{y_{pi}}{m_{pi}}$$

Estimated total number of animals per category in the Philippines:

$$\hat{A} = Np.p = \frac{a}{k}$$

where:

y_{pi} – *value obtained from the i^{th} sample proprietor of the p^{th} province*

n_p – *number of sample proprietors in the p^{th} province*

m_{pi} – *number of milking animals of the i^{th} sample proprietor in the p^{th} province*

M_P – *number of milking animals in the p^{th} province*

M – *number of milking animals in the Philippines*

l = *number of sample province*

N_p – *total number of existing stocks in the p^{th} province*

N – *total number of existing stocks in the Philippines*

a_p – *number of sample existing stocks in the p^{th} province falling in a given category*

a – *number of sample existing stocks in the Philippines falling in a given category*

k_p – *number of sample existing stocks in the p^{th} province (all categories)*

k – *number of sample existing stocks in the Philippines (all categories)*

Number of Animals Slaughtered in Slaughterhouses and Poultry Dressing Plants

Data Processing

The Survey of Slaughterhouses and Dressing Plants (SSHPDP) requires daily recording of slaughter by the meat inspectors assigned in the facility. The NMIS Meat Inspectors stationed at the accredited abattoirs and dressing plants record slaughter data either by using the prescribed BAS-NMIS common slaughter form or using a logbook. Likewise, LGU Meat Inspectors, assigned in the LGU-supervised slaughterhouse accomplish the BAS-NMIS common slaughter form. BAS staff in turn collects the duplicate BAS-NMIS common slaughter form from both NMIS and LGU.

The data gathered are processed using MS Excel Application. The system provides for consolidation of outputs at the regional and national levels, by province, by region and by slaughterhouse and poultry dressing plants and by month. Output tables are presented on a monthly basis for review and analysis, particularly, checking growth rates.

Manual Editing

The BAS consolidates data coming from the accredited and locally registered slaughterhouses and poultry dressing plants. The BAS personnel reviews and verifies by looking at the available time series data. NMIS is being consulted for any abrupt changes from the previous reference quarter and ask for possible reasons for the changes. The Provincial Agricultural Statistics Officer (PASO) supervises the consolidation and review of slaughter data in the province. The BAS Regional Agricultural Statistics Officer (RASO) supervises the consolidation, review and analysis of slaughter data in all provinces within the region.

Estimation and/or Compilation Procedure

The BAS personnel (point person for the activity) summarizes the data into a quarterly total with monthly breakdown of animals slaughtered/dressed using BAS-NMIS common slaughter form. The compiled and estimated BAS-NMIS common slaughter form is submitted to the Regional Operations Center (ROC) to come up with a regional slaughtered slaughterhouse and poultry dressing plant (SSHPDP) data series and to the Central Office to come up with a regional and national SSHPDP data series and database.

Revision of Estimates

Please refer to the discussion of the topic under Palay and Corn Production Data System.

C. Fisheries

2.2.1.1c Concepts, Definitions and Classifications

Aquaculture - refers to fishery operations involving all forms of raising and culturing fish and other fishery species in fresh, brackish and marine water areas.

Aquafarm - is the farming facility used in the culture or propagation of aquatic species including fish, mollusk, crustaceans and aquatic plants for purposes of rearing and culturing to enhance production. The types of aquafarm are the following:

Fish Cage - *is an enclosure which is either stationary or floating made up of nets or screens sewn or fastened together and installed in the water with opening at the surface or covered and held in place by wooden/bamboo posts or various types of anchors and floats.*

Fish Pen - *is an artificial enclosure constructed within a body of water for culturing fish, fishery/aquatic resources made up of bamboo poles closely arranged in an enclosure with wooden material, screen or nylon netting to prevent escape of fish.*

Fishpond - *is a land-based facility enclosed with earthen or stone material to impound water for growing fish.*

Mussel Farming - *is the cultivation of mussel in suitable water areas by any farming method with appropriate intensive purposes.*

Oyster Farming - *is the cultivation of oysters in suitable water areas by any method for production purposes.*

Rice Fish Culture - *is the seeding of fish fry and fingerlings, caring and subsequent harvesting fish in paddy fields. Examples of the kind of fish culture in palay fields are "hito", carp, "dalag", etc.*

Seaweed Farming - is the cultivation in suitable water areas by any method with appropriate intensive care for production in commercial quantities.

Commercial Fishing - is the catching of fish with the use of fishing boats with a capacity of more than three (3) gross tons for trade, business or profit beyond subsistence or sports fishing.

Commercial Waters - waters beyond municipal waters marked by coordinates drawn from two points on the seaward border of the municipality and extending to the Exclusive Economic Zone (EEZ) and in the adjacent high seas.

Culture System

Alternate Culture System - *is cropping rotation of two fish species, for example, milkfish will be cultured from November to March and prawn from May to October.*

Monoculture - *is the culture of single species of fish in one compartment.*

Polyculture - *is the culture of two or more species of fish in one compartment.*

Environment- refers to water condition under which the aquafarm operates and species are reared and cultured. Types of environment are:

Brackishwater Environment - *refers to mixed seawater and freshwater and salinity varies with the tide. Examples are estuaries, mangroves and mouth of rivers where seawater enters during high tide.*

Freshwater Environment - *refers to water without salt or marine origin, generally found in lakes, rivers, canals, dams, reservoirs, paddy fields and swamps.*

Seawater/Marinewater Environment - *refers to inshore and open waters and inland seas in which salinity generally exceeds 20 percent.*

Fish Fingerling - is a stage in the life cycle of the fish measuring to about 6 - 13 cm. depending on the species.

Fish Fry - is a stage at which a fish has just been hatched usually with sizes from 1 - 2.5 cm.

Fish Tanks - are structures made of wood, glass or cement usually in rectangular or cylindrical shape designed to grow and culture fish for breeding/seed fish production.

Fisherfolk - refers to people who are directly or personally and physically engaged in catching and/or culturing and processing fishery and/or aquatic resources.

Fisheries - refer to all activities relating to the act or business of fishing, culturing, preserving, processing, marketing, developing, conserving and managing aquatic resources and the fishery areas, including the privilege to fish or take aquatic resource thereof.

Fisheries Production - is the quantity of fish unloaded in the landing center, caught in inland bodies of water and/or harvested/produced from aquafarms; presented in metric tons.

Fishermen - refers to a classification of workers who catch, breed and raise fish and cultivate other forms of aquatic life for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Fishery Species - refers to all aquatic flora and fauna including but not restricted to fish, algae, coelenterates, mollusks, crustaceans, echinoderms and cetaceans.

Fishing Boat - is a type of watercraft, such as motorized/non-motorized banca, sailboat, motorboat, etc., either licensed or not, used for fishing purposes.

Fishing Effort - is a collective variable pertaining to manpower, machine power and technology employed in harvesting fishery resources, such as number of fishing hours spent in fishing, number of units of a particular gear used, number of hauls, number of hooks, etc.

Fishing Gear - is any instrument or device and its accessories utilized in taking fish and other fishery species.

Fishing Ground - refers to areas in any body of water where fish and other aquatic resources congregate and become target of capture.

Gathering of Fishery Products - is the collection of uncultivated aquatic products for consumption and/or for sale.

Gross Tonnage - includes the underdeck tonnage, permanently enclosed spaces above the tonnage deck, except for certain exemptions. In broad terms, all the vessel's "closed-in" spaces expressed in volume terms on the basis of one hundred cubic feet (that equals one gross ton).

Inland Fishing Household- is a household in which one or more members are directly engaged for at least 30 days in fishing anytime during the past 12 months.

Inland Municipal Fishing - refers to the catching of fish, crustaceans, mollusks and all other aquatic animals and plants in inland waters like lakes, rivers, dams, marshes, etc. using simple gears and fishing boats some of which are non-motorized with a capacity of less than or equal to three (3) gross tons; or fishing not requiring the use of fishing boats.

Inland Municipal Waters - include streams, lakes, and tidal waters within the municipality, not being the subject of private ownership, and not comprised within national parks, public forests, timberlands, forest reserves, or fishery reserves and other protected areas as defined under R.A. No. 7586 (the National Integrated Protected Area System (NIPAS) Act of 1992).

Landing Center - is the place where fish catch and other aquatic products are unloaded and traded.

Management System

Extensive Management System - *is a system wherein the stocking rate averages 3,000 or less for milkfish and 10,000 or less for shrimps and prawns post larvae/ha. This involves culture of species of fish in comparatively big ponds with sizes ranging from 2 to 20 hectares of grow-out ponds. The culture of species depends solely or completely on natural food propagated in the pond with or without fertilization and on tidal water exchange production of about 120-1,200 kg./ha.*

Intensive Management System - *is a system wherein the stocking rate for shrimps and prawns ranges from 30,000 to 50,000/ha. The ponds are smaller, i.e., 1,000-5,000 square meters. The high stocking density could only be supported through major inputs such as formulated feeds mostly in pellet form. Water exchanges through pumps and paddle wheels are needed in the aeration process. Production is about 5,000-15,000kg./ha./year.*

Semi-Intensive Management System - *is a system wherein the stocking rate ranges from 3,000-10,000/ha. for milkfish and 10,000-50,000/ha. for shrimps and prawns. The pond size is 1-5 hectares grow-out ponds. This culture requires supplementary feeding of trash fish, mussels, meat, pellets, etc. aside from natural food propagated in it. Water*

pumps are used in addition to tidal water exchange. Production is about 500-4,000kg/ha./year.

Marine Water - *is the seawater environment with a salinity ranging from 34.5 to 35.5 parts per thousand (ppt) consisting of ocean, bay, gulf and channels.*

Municipal Fishing - is fishing within municipal waters using fishing vessels of three (3) gross tons or less, or fishing not requiring the use of fishing vessels.

Municipal Waters - include not only streams, lakes, inland bodies of water and tidal waters within the municipality which are not included within the protected areas as defined under Republic Act No. 7586 (The NIPAS Law), public forest, timber lands, forest reserves or fishery reserves, but also marine waters included between two lines drawn perpendicular to the general coastline from points where the boundary lines of the municipality touch the sea at low tide and a third line parallel with the general coastline including offshore islands and 15 kilometers from such coastline.

Owner/Operator - refers to a person who owns and operates the farm, exercises technical initiatives and takes full economic risk and responsibility in the administration and operation of the farm.

Classifications

The BAS data systems for production use or conform with the existing statistical standards and classifications in the Philippine Statistical System (PSS).

2.2.1.2c Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Volume of fisheries production *(municipal, commercial, aquaculture)*	National and sub-national levels	1980	Monthly Commercial Fisheries Survey (MCFS)	BAS
			Monthly Municipal Fisheries Survey (MMFS)	BAS
			Quarterly Commercial Fisheries Survey (Traditional Landing Centers) (QCFS 1)	BAS

...(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Volume of fisheries production *(municipal, commercial, aquaculture)*	National and sub-national levels	1980	Quarterly Commercial Fisheries Survey (PFDA, LGU and Privately-Managed Landing Centers) (QCFS 2)	BAS, PFDA, LGU and Privately-Managed Landing Centers
			Quarterly Municipal Fisheries Survey (Traditional Landing Centers) (QMFS 1)	BAS
			Quarterly Municipal Fisheries Survey (PFDA and LGU-Managed Landing Centers) (QMFS 2)	BAS, PFDA and LGU-Managed Landing Centers
			Quarterly Inland Fisheries Survey (QIFS)	BAS
			Aquaculture Production Survey (AqPS)	BAS
			Quarterly Aquaculture Surveys (QAqS)	BAS
Volume of fisheries production by quarter and by species *(municipal, commercial, aquaculture)*	National and sub-national levels	2002	Monthly Commercial Fisheries Survey (MCFS)	BAS
			Monthly Municipal Fisheries Survey (MMFS)	BAS
			Quarterly Commercial Fisheries Survey (Traditional Landing Centers) (QCFS 1)	BAS
			Quarterly Commercial Fisheries Survey (PFDA, LGU and Privately-Managed Landing Centers) (QCFS 2)	BAS, PFDA, LGU and Privately-Managed Landing Centers

...(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
			Quarterly Municipal Fisheries Survey (Traditional Landing Centers) (QMFS 1)	BAS
			Quarterly Municipal Fisheries Survey (PFDA and LGU-Managed Landing Centers) (QMFS 2)	BAS, PFDA and LGU-Managed Landing Centers
			Quarterly Inland Fisheries Survey (QIFS)	BAS
		1996	Aquaculture Production Survey (AqPS)	BAS
			Quarterly Aquaculture Surveys (QAqS)	BAS
Value of fisheries production *(municipal, commercial, aquaculture)*	National and sub-national levels	1980	Monthly Commercial Fisheries Survey (MCFS)	BAS
			Monthly Municipal Fisheries Survey (MMFS)	BAS
			Quarterly Commercial Fisheries Survey (Traditional Landing Centers) (QCFS 1)	BAS
			Quarterly Commercial Fisheries Survey (PFDA, LGU and Privately-Managed Landing Centers) (QCFS 2)	BAS, PFDA, LGU and Privately-Managed Landing Centers
			Quarterly Municipal Fisheries Survey (Traditional Landing Centers) (QMFS 1)	BAS
			Quarterly Municipal Fisheries Survey (PFDA and LGU-Managed Landing Centers) (QMFS 2)	BAS, PFDA and LGU-Managed Landing Centers

...(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
			Quarterly Inland Fisheries Survey (QIFS)	BAS
			Aquaculture Production Survey (AqPS)	BAS
			Quarterly Aquaculture Surveys (QAqS)	BAS
Value of fisheries production by quarter and by species *(municipal, commercial, aquaculture)*	National and sub-national levels	2002	Monthly Commercial Fisheries Survey (MCFS)	BAS
			Monthly Municipal Fisheries Survey (MMFS)	BAS
			Quarterly Commercial Fisheries Survey (Traditional Landing Centers) (QCFS 1)	BAS
			Quarterly Commercial Fisheries Survey (PFDA, LGU and Privately-Managed Landing Centers) (QCFS 2)	BAS, PFDA, LGU and Privately-Managed Landing Centers
			Quarterly Municipal Fisheries Survey (Traditional Landing Centers) (QMFS 1)	BAS
			Quarterly Municipal Fisheries Survey (PFDA and LGU-Managed Landing Centers) (QMFS 2)	BAS, PFDA and LGU-Managed Landing Centers
			Quarterly Inland Fisheries Survey (QIFS)	BAS
			Aquaculture Production Survey (AqPS)	BAS
			Quarterly Aquaculture Surveys (QAqS)	BAS

**The year cited here refers to the start of available data series.*

2.2.1.3c Data Processing, Estimation and Revision Methodology

Commercial and Marine Municipal Fisheries Production

Data Processing

Monthly Commercial Fisheries Survey
Monthly Municipal Fisheries Survey

MS Excel worksheet are used in encoding, estimation and report generation of Monthly Commercial/Municipal Fisheries Survey. Data processing is done at the Operation Centers.

Initially, the questionnaires are edited by checking the accuracy, completeness and consistency of entries. Afterwards, entries in the questionnaires are encoded. To further ensure the quality of data, computerized editing is done. Here, an error list is generated and provided to the data processor who in turn validates from the questionnaire then corrects and updates the data files. This is an iterative process until all errors are corrected. Once the data files are error-free, the final step is to generate output tables for analysis.

Quarterly Commercial Fisheries Survey
Quarterly Municipal Fisheries Survey

To facilitate the output generation of the quarterly survey results, the Commercial/Municipal Data Generation System (Data Gen) has been developed. These are MS Excel 2000 worksheets linked together to achieve the purpose.

Entries from the collection forms are encoded at the provincial worksheet. These are compiled and summarized at the regional worksheets.

Estimation and/or Compilation Procedure
Commercial and Marine Municipal Fisheries Production

Estimating total volume of fish catch in a month based on Monthly Commercial/Municipal Fisheries Survey is illustrated as follows:

$$\hat{Y}_{pm} = \sum_{h=l}^{H} \frac{L_h}{l_h} \sum_{i=l}^{l_k} \frac{D_{hi}}{d_{hi}} \sum_{j=l}^{d_{ki}} \frac{B_{hij}}{b_{hij}} \sum_{k=l}^{b_{kij}} y_{hijk}$$

where:

y_{hijk} – *volume of fish unloaded by the k^{th} sample boat during the j^{th} day in the i^{th} landing center in the h^{th} stratum*

b_{hij} – *number of sample boats unloading during the j^{th} day in the i^{th} landing center in the h^{th} stratum*

B_{hij} – *total number of boats unloading during the j^{th} day in the i^{th} landing center in the h^{th} stratum*

d_{hi} – *number of survey days in a month in the i^{th} landing center in h^{th} stratum*

D_{hi} – *total number of days in reference month in the i^{th} landing center in the h^{th} stratum*

l_h – *number of sample landing centers in the h^{th} stratum*

L_h – *total number of landing centers in the h^{th} stratum*

Thus, the estimated total volume of fish catch for the quarter based on Monthly Commercial/Municipal Fisheries Surveys is given as follows:

$$\hat{Y}_p = \sum_{m=l}^{3} \hat{Y}_{pm}$$

On the other hand, estimation of total volume of fish catch based on Quarterly Commercial/Municipal Fisheries Surveys is done using the following formula:

$$\hat{Y}_q = \sum_{h-l}^{H} \frac{L_h}{l_h} \sum_{i=l}^{l_h} \sum_{j-i}^{m} \frac{\sum_{k-l}^{y} y_{hijk}}{r}$$

where:

y_{hijk} – *volume of fish unloaded reported by the k^{th} sample respondent in the j^{th} month in the i^{th} landing center in the h^{th} stratum*

r – *number of respondents interviewed per landing center (r=5)*

m – *number of months in a quarter (m=3)*

l_h – *number of sample landing centers in the h^{th} stratum*

L_h – *total number of landing centers in the h^{th} stratum*

Both the Monthly Commercial/Municipal Fisheries Surveys and Quarterly Commercial/Municipal Fisheries Surveys take into account the traditional landing centers. For non-traditional landing centers like PFDA, LGU and privately managed landing centers, data sets are gathered from administrative records, as mentioned in the previous section.

For provinces covered by the Monthly Commercial/Municipal Fisheries Surveys, the provincial estimate of the volume of fish catch is the sum of estimates from survey and data from the administrative records, expressed as,

$$\hat{Y} = \hat{Y}_p + \hat{Y}_o$$

where:

$\hat{Y}$ – *provincial estimate of total fish catch*

$\hat{Y}_p$ – *provincial estimate of total fish catch from survey in traditional landing centers*

$\hat{Y}_o$ – *total fish catch from non- traditional landing centers*

For provinces conducting Quarterly Commercial/Municipal Fisheries Surveys, the estimate of fish catch in the province is the sum of estimates from the survey and data from administrative records, expressed as,

$$\hat{Y} = \hat{Y}_q + \hat{Y}_o$$

where:

$\hat{Y}$ – *provincial estimate of total fish catch*

$\hat{Y}_q$ – *provincial estimate of total fish catch from quarterly survey in traditional landing centers*

$\hat{Y}_o$ – *total fish catch from non- traditional landing centers*

Inland Municipal Fisheries Production

Data Processing

The processing of the results of the Quarterly Inland Fisheries Survey is part of the Municipal Data Generation System (Data Gen). The survey returns are encoded in one of the worksheets and are processed and compiled in the same manner.

Estimation and/or Compilation Procedure

Estimating total volume of fish catch

$$\hat{Y} = \frac{N}{n}\sum Y$$

where:

$\hat{Y}$ – *estimate of volume of fish catch in the province*

N/n – total/sample households in the province

Y- volume of fish catch

Aquaculture Production
Aquaculture Production Survey

Data Processing

The processing of Aquaculture Production Survey returns uses the MS Excel. It is a decentralized processing system.

Initially, the questionnaires are edited by checking the accuracy, completeness and consistency of entries. Afterwards, entries on the questionnaires are encoded. Once the data files are error-free, the next and final step is to generate output tables for analysis.

Quarterly Aquaculture Surveys

To facilitate the output generation of the Quarterly Aquaculture Surveys, the Aquaculture Data Generation System (Data Gen) has been developed. These are MS Excel 2000 worksheets linked together to achieve the purpose.

Entries from the collection forms are encoded at the provincial worksheet. These are compiled and summarized at the regional worksheets and ultimately at the national level.

Estimation and/or Compilation Procedure

Estimation of aquaculture production by aquafarm type based on Aquaculture Production Survey is done as follows:

$$\hat{Y}_{pa} = \sum_{h-l}^{H} \frac{S_{ah}}{s_{ah}} \sum_{i=l}^{S_{ah}} y_{ahi}$$

where:

$\hat{Y}_{pa}$ – *estimated total aquafarm production of a^{th} aquafarm type in p^{th} province*

S_{ah} – *total number of aquafarms of a^{th} type in the h^{th} stratum*

s_{ah} – *number of sample of aquafarms of a^{th} type in the h^{th} stratum*

y_{ahi} – *production of the i^{th} sample aquafarm of a^{th} aquafarm type in the h^{th} stratum*

H – *number of strata in the province*

For Quarterly Aquaculture Surveys, the percentage change for a given aquafarm type is computed as follows:

$$\%\Delta_a = \frac{\sum_{i=l}^{n_a} Y_{TQai}}{\sum_{i=l}^{n_a} Y_{SQLYai}} - 1$$

where

$\%\Delta_a$ – *percentage change in production of a^{th} aquafarm type for the province*

Y_{TQai} – *production of a^{th} aquafarm type for the current quarter of the i^{th} sample aquafarms*

Y_{SQLYai} - *production of a^{th} aquafarm type same quarter last year of the i^{th} sample*

n_a – *number of sample aquafarms of a^{th} aquafarm type*

Estimated total production of a given aquafarm type in the province is represented by:

$$\hat{Y}_{TQa} = \%\Delta\hat{Y}_{SQLYa}$$

where:

$\hat{Y}_{TQa}$ – *estimated total production of ath aquafarm type in the province for the current quarter*

$\hat{Y}_{SQLYa}$ - *estimated of production of ath aquafarm type in the province for same quarter last year*

Thus, the estimated total aquaculture production in the province, $\hat{Y}_{TQ}$, is the aggregate of the estimated total production of all aquafarm types, that is,

$$\hat{Y}_{TQ} = \sum_{a-l}^{A} \hat{Y}_{TQa}$$

where A is the total number of aquafarm types in the province

Revision Methodology

Please refer to the discussion of the topic under Palay and Corn Production Data System.

2.2.1 Production

D. Macroeconomic Statistics/Indicators

2.2.1.1d Concepts, Definitions and Classifications

Gross Domestic Product (GDP) - is the value of all goods and services produced domestically; the sum of gross value added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the values of their outputs).

Gross National Product (GNP) or Gross National Income (GNI) - is Gross Domestic Product adjusted with the net factor income from the rest of the world. It refers to the aggregate earnings of the factors of production (nationals) plus indirect taxes (net) and capital consumption allowance.

Gross Output (GO) - total value of production in agriculture which is derived by multiplying the volume of production by price received by the producers.

Gross Value Added (GVA) - is the difference between gross output and intermediate inputs. Gross output of a production unit during a given period is equal to the gross value of the goods and services produced during the period and recorded at the moment they are produced, regardless of whether or not there is production process during the accounting period.

Value at Constant Prices- refers to valuation of transactions, wherein the influence of price changes from the base year to the current year has been removed.

Value at Current Prices- is the value based on prices during the reference year; nominal year.

Classifications

The BAS data systems for production use or conform with the existing statistical standards and classifications in the Philippine Statistical System (PSS).

2.2.1.2d Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Gross National Product or Gross National Income	National	1946	National Income Accounts	NSCB
Gross Domestic Product	National and sub-national levels	1946 (national level) 1975 (sub-national	National Income Accounts	NSCB
Gross Value Added in Agriculture	National and sub-national levels	1946 (national level) 1975 (sub-national level)	National Income Accounts	NSCB
Gross Output in Agriculture	National and sub-national levels	1988 (national and sub-national levels)	BAS Production and Prices Surveys	BAS

**The year cited here refers to the start of available data series.*

2.2.1.3d Data Processing, Estimation and Revision Methodology

Gross Domestic Product/Gross National Product/Gross Value Added in Agriculture

Data are obtained from the National Statistical Coordination Board (NSCB), which is the official national accounts compiler of the Philippine Statistical System (PSS).

Gross Output in Agriculture

Performance of Philippine Agriculture

Data Processing

The generation of data on value of production in agriculture is done at the Central Office using the MS Excel program. The valuation process enables the aggregation of values to derive growth rates by sub-sector and eventually, the growth rate of the whole sector. These data are subjected to reviews initially at AASID as the lead unit and are presented first at the National Data Review in the presence of the Regional Agricultural Statistics Officers (RASOs), technical and support staff of the different operating units of the Central Office.

Estimation and/or Compilation Procedure

Valuation of agricultural outputs for the year is prepared quarterly on a cumulative basis. It is done as follows:

A. Valuation at Constant 2000 prices
    1. Valuation for the first quarter (January to March)
        i. Compile and review the first quarter data on volume of production and farmgate prices of crops, livestock, poultry and fishery
        ii. Compute for the first quarter value by multiplying January to March volume of production of each commodity by the corresponding January to March 2000 average farmgate price
    2. Valuation for the first half (January to June)
        i. Compile and review the second quarter data on volume of production and farmgate prices of crops, livestock, poultry and fishery
        ii. Compute for the second quarter value by multiplying April to June volume of production of each commodity by the corresponding April to June 2000 average farmgate price

iii. *Add first quarter value and second quarter value to get the first half value*
iv. *Add first quarter volume and second quarter volume to get the first half volume*
v. *Divide first half value by first half volume to get the average weighted price for the first half of the year*
vi. *Multiply first half volume by first half average weighted price to get the total value for the first half of the year*

3. Valuation for the first nine (9) months (January to September)
   i. *Compile and review the third quarter data on volume of production and farmgate prices of crops, livestock, poultry and fishery*
   ii. *Compute for the third quarter value by multiplying July to September volume of production of each commodity by the corresponding July to September 2000 average farmgate price*
   iii. *Add first half value and third quarter value to get the first nine-month value*
   iv. *Add first half volume and third quarter volume to get the first nine months volume*
   v. *Divide first nine (9) -month value by first nine (9) -month volume to get the average weighted price for first nine (9) months*
   vi. *Multiply first nine (9) months volume by first nine (9) months average weighted price to get the reported total value for the first nine (9) months*
4. Valuation for the year (January to December)
   i. *Compile and review the fourth quarter data on volume of production and farmgate prices of crops, livestock, poultry and fishery*
   ii. *Compute for the fourth quarter value by multiplying October to December volume of production of each commodity by the corresponding October to December 2000 average farmgate price*
   iii. *Add first nine (9)-months value and fourth quarter value to get the value for the year*
   iv. *Add first nine (9)-months volume and fourth quarter volume to get the volume for the year*
   v. *Divide value by volume for the year to get the average weighted price for the year*
   vi. *Multiply volume for the year by average weighted price for the year to get the total value for the year*

B. Valuation at Current Prices

The procedure is the same as in computing the value of production at constant prices except that it uses the current year's average farmgate prices.

Some of the prices of commodities are weighted because of varietal classification/type of farm.

These commodities with prices by variety are corn, banana, mango, coconut, tobacco, coffee, onion. Those with prices by type of farm are from the livestock and poultry subsector.

In the case of sugarcane, there are no available prices on sugarcane. The BAS' Farm Price Survey generates data on prices of muscovado and centrifugal sugar per kilogram. To satisfy the requirements of valuation, the following procedure is adopted:

- *The volume of raw sugar is multiplied by the price of centrifugal sugar*
- *The resulting value is multiplied by 0.65 to indicate that 65 percent of the total value of raw sugar produced is the value of the product of agriculture. The 65-35 planter-miller sharing system is adopted in the valuation process. The total value credited to agriculture is divided by the total volume of sugarcane to derive the average price of sugarcane.*

In the case of "other crops", the average farmgate price is derived from the prices of selected indicator commodities. Weighted prices of these indicator commodities are computed and used in updating the price of the aggregated "others".

Regional Agricultural Production Accounts

Valuation of agricultural outputs for the year is prepared annually. It is done as follows:

A. For each region, valuation at constant prices is done by multiplying the annual volume of production of each commodity by the 2000 average farmgate price.

VPo = Qt X FGpo

where:

VPo = Value of production at constant prices;

QT = Volume of production for the current period; and

FGPo = Farmgate price at constant 2000 prices

B. Valuation at current prices is done by multiplying the annual volume of production of each commodity by the average farmgate price during the reference year.

VPt = Qt X FGpt

where:

VPt = Value of production at current prices;

QT = Volume of production for the current period; and

FGPt = Farmgate price at current prices

Average prices of corn, coconut, banana, mango, tobacco, coffee and onion are weighted using varietal classification. In the case of poultry, prices are weighted using established national weights by type of farm i.e., commercial and backyard.

The value of sugarcane production is computed using the national average weighted farmgate price.

In cases where farmgate prices are not available for some commodities in the regions, values are computed using the annual national average farmgate prices.

In the case of "Others" under Crops, a set of indicator commodities is established to account for the important commodities in the region. This is guided by the following procedures:

- *The set of commodities for each region (after the top 20 national commodities and excluding palay and corn) are harmonized as to the volume of production and farmgate prices. The commodities are valued using 2000 prices.*
- *After valuation, all commodities listed are ranked from highest to lowest according to value of production and those that get into the 90.0 percent cumulative shares are identified and listed.*
- *After identifying the "indicator" commodities, prices are weighted by volume of production to come up with a "weighted" price for total production of "others*".

2.2.1.4 Other Reference Information

1. The Report on the Performance of Agriculture, which is published by the BAS, serves as data inputs to the national accounts compiler, the National Statistical Coordination Board (NSCB), in the preparation of the National Income Accounts.

2. All the statistical surveys and selected activities at the BAS are backed up by Manual of Operations which discusses the objectives, scope and coverage of the survey as well as the sampling methodology, estimation procedure and the instruction in filling up the questionnaire. The latest inventory of Manuals involving production and prices surveys has listed the following:
    i. *Palay Production Survey*
    ii. *Corn Production Survey*
    iii. *Semi-annual Dairy Production Survey*
    iv. *Backyard Livestock and Poultry Survey*
    v. *Commercial Livestock and Poultry Survey*
    vi. *Monthly Commercial Fisheries Survey*
    vii. *Monthly Municipal Fisheries Survey*
    viii. *Aquaculture Production Survey*
    ix. *Integrated AGMARIS-AMNEWSS*
    x. *Farm Prices Survey*
    xi. *Crops Production Survey*
3. The following manuals provide standard processes used in the review and validation of data on crops, livestock, poultry, fisheries and prices:
    i. *Cereals Data Review and Validation*
    ii. *Other Crops Data Review and Validation*
    iii. *Fisheries Statistics Review and Validation Manual*
    iv. *Manual on Data Validation for Livestock and Poultry*
    v. *Data Review/Validation Guidelines for Farm Prices*
4. The following manuals contain the data processing scheme and estimation procedures adopted for crops, fisheries, prices and supply utilization accounts
    i. *Survey of Commercial/Municipal Fish Catch-MCSys Data Processing*
    ii. *Farm Prices Survey Computerized Data Processing System*
    iii. *Handbook on Supply Utilization Accounts*
5. The data coming from the Census of Agriculture and Census of Fisheries are used by the BAS not only as frame or sources of data checks but also as inputs in the analysis of survey results.

2.2.2 Trade

2.2.2.1 Concepts, Definitions and Classifications

Balance of Trade - is the difference between the value of the nation's export and the value of its imports. When exports are higher than imports, there is a trade surplus. When imports exceed export, there is a trade deficit.

Bale - is the unit of measure used in fibers in trading centers, one bale measures approximate 55 cm in width, 60 cm in height, 100 cm in length and weights 125 kilograms.

Cost Insurance Freight (C.I.F) Value - is derived by adding the three component costs of the commodity, namely: the F.O.B. Value, the insurance cost and the freight cost from the exporting country's frontier to its destination.

Country of Destination - is the country of ultimate destination/shipment. It is not necessarily the country where the commodity/shipment is to be unloaded, as in the case of shipment unloaded from one ocean liner but is destined to a country that is landlocked. In which case, the country of destination is the landlocked country.

Country of Origin - is the country where the commodity is grown, mined or manufactured. Further, processing or material added to it in another country must bring about a material transformation to render such country as the country of origin. It should remain unchanged if the commodity is subjected to mere sorting, grading, cleaning, packaging or similar processing.

Domestic Exports - export of goods which are grown, produced, mined or manufactured in the Philippines.

Export - refers to all goods leaving the country which are properly cleared through the Customs.

Export Duties - are the levies collected on wood, mineral, plant vegetable and animal products, as provided for under P.D. 230 that are shipped out of the country based on the value thereof.

Free on Board (F.O.B) Value - is the value of the goods free on board the carrier at the frontier of the exporting county. It includes inland freight, export duty and other expenses. Ocean freight, insurance and consular fees are, however excluded.

Freight - is the cost of transporting good from one place or another either by land, rail, air or sea.

Imports - refer to all goods entering any of the seaports or airports of entry of the Philippines properly cleared through the Customs or remaining under the Customs control, whether the goods are for direct consumption, for merchanting (global manufacturing, global wholesaling/retailing, and

commodity dealing that is settled by trade in commodities), for warehousing or for further processing.

Inflow (also, Ship-in) - refers to the flow of animal and animal products coming in to the reference setting or area.

Outflow (also, Ship-out) - refers to the flow of animal and animal products going out of the reference setting or area.

Re-exports- are exports of imported goods which do not undergo physical and/or chemical transformation in the Philippines.

Volume of Agricultural Exports and Imports- refers to the quantity of goods exported/imported expressed in kilograms (kg) for most items; live animals in heads; coconut in number of nuts; and abaca in bale.

2.2.2.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Total value of exports and imports	International (by country of origin and destination)	1991	Foreign Trade Statistics	NSO
Total volume of agricultural exports and imports	International (by country of origin and destination)	1991	Foreign Trade Statistics	NSO
Total value of agricultural exports and imports	International (by country of origin and destination)	1991	Foreign Trade Statistics	NSO

**The year cited here refers to the start of available data series.*

2.2.2.3 Data Processing, Estimation and Revision Methodology

Total volume/value of agricultural exports and imports

Data processing is done both mechanically and manually. It includes manual transcribing of Economic Deck Document/Import Entry Internal Revenue Declaration (ED/IERD) entries to NSO prescribed processing sheets Table 8 for Exports (T-8-E) and for Imports (T-8-I).

Copies of import and export documents collected by NSO personnel from the Bureau of Customs in all ports and airports of entry in the Philippines are systematically controlled. Collected documents are sorted by month, by port, by single or multiple commodity entries and by value. About 100 entries are assigned control numbers and bundled together for the convenience of coders, computers and encoders. The bundles then undergo the following stages of processing:

1. *coding – process of translating each item of information to be culled into its equivalent alphabetic and/or numeric code in accordance with the commodity, country, nationality of trader, flag or registry of carrier of port classification used.*
2. *code verification – process of determining the appropriateness of codes used.*
3. *computation – process of converting the declared values appearing in the entries into FOB value, insurance and freight in US dollars.*
4. *computation verification – process of checking the accuracy of computed data.*

Quality control of coding and computation for both imports and exports is carried through sample verification. This method enables the verifier to decide after a number of entries have been verified whether to reject, continue or accept the bundle. The number and type of errors are recorded and brought to the attention of the coder or computer operator. Further training on pinpointed causes of errors is given to processors to improve the quality of their work.

After the necessary corrections are effected on erroneous figures, the monthly tabulations are finally produced. When all monthly tabulations for a year have been completed, the annual tabulations are then prepared.

The coverage of the annual publication is usually higher than the sum of monthly coverage, since it includes data from documents which arrive too late for inclusion in their respective months. Separate tabulations for late entries are prepared to enable users to correct monthly preliminary figures.

At the BAS, the monthly and annual Import and Export Data coming from National Statistics Office (NSO) are consolidated using MS Excel program. At present, there is no system yet used in coming up with a swift aggregation of statistical tables for trade data. The compiled data include the volume and value for the top 10 major import and export commodities and their corresponding countries of origin and destination and aggregation by

commodity or sub-commodity groupings. Further processing of data includes C.I.F. computations for imports data and the quarterly data series. Manipulation through MS Excel is done to derive other information such as ranking of commodities by value and agricultural trade balances which are used for the publication on quarterly trade performance. The Excel-based data are converted to PX-files through the PX-Edit. These facilitate faster provision of data series on trade. The BAS is still working on the enhancement in order to quickly respond to the statistical requirement of the growing number of data users.

2.2.2.4 Other Reference Information

The BAS produces regular quarterly memorandum/bulletin on developments regarding agricultural foreign trade. This is submitted to the Office of the Secretary of Agriculture for the Secretary's information and appropriate action.

2.2.3 Food Consumption

2.2.3.1 Concepts, Definitions and Classifications

Carcass - means fresh meat of any slaughtered animal after bleeding and dressing with the offals removed from the body.

Consumption - includes food prepared at home and consumed at home by household members, delivered/take-home food from outside (bought or free) and consumed at home by the household members, food prepared at home and consumed outside by household members, and food prepared and eaten in food establishment.

Household - is a social unit consisting of a person living alone or a group of persons who sleep in the same housing unit and have a common arrangement in the preparation and consumption of food.

Import Dependency Ratio - means the extent of dependency on importation in relation to domestic consumption. It is the ratio of import to the sum of production plus import minus export and multiplied by 100.

Offal - in relation to slaughtered animals, it means any edible/ non-edible part of the animals other than the carcass.

Per Capita Consumption - refers to the quantity of food consumed per person. It is derived by dividing total consumption of a particular commodity by the population.

Self-Sufficiency Ratio - means the extent to which a country relies on its own production or the extent of sufficiency of domestic production in relation to domestic consumption. It is the ratio of production to the sum of production plus import minus export and multiplied by 100

Socio-Economic Classification, AB/Upper Class - is the most affluent group which homes and lifestyle exude an obvious disregard for or lack of economizing.

Socio-Economic Classification, C/Middle Class - is the group of households which homes and lifestyle reflect comfortable living and the capacity to indulge in a few luxuries.

Socio-Economic Classification, D/Lower Class - is the group of households which have some comfort and means but basically thrive on a hand-to-mouth existence.

Socio-Economic Classification, E/Extremely Lower Class - is the group of households which evidently face great difficulties in meeting their basic survival needs.

Supply Utilization Accounts for Agriculture (SUA) - is a comprehensive framework for the physical accounting of agricultural commodities produced in the country. It is composed of the following:

> **Supply** - *is the quantity of food supplies available before disposal to food and non-food uses. It is comprised of Beginning Stocks, Production and Imports*.
>
> > **Beginning Stock** - *refers to the quantity of the commodity available at the beginning of the reference period. This includes stocks held at various levels from the farm to final consumption or consumers of the commodity usually at the household level. It also includes that part of imports in stocks.*
> >
> > **Production** - *relates to the total domestic production that takes place during the reference period. It includes commercial and backyard production.*
> >
> > **Imports** - *refer to all goods entering any of the seaports or airports of entry of the Philippines properly cleared through the Customs or remaining under the Customs control, whether the goods are for direct consumption, for merchanting (global manufacturing, global*

wholesaling/retailing, and commodity dealing that is settled by trade in commodities), for warehousing or for further processing.

Utilization - *comprises Seeds, Feeds and Waste, Processing, Exports and the balance which represents the Net Food Disposable*.

Seeds - *is the amount of commodity allotted for seeds or in general for production purposes.*

Feeds - *refer to the amount of food commodity allotted for animals or livestock/poultry during the reference period.*

Wastage - *is the amount of food commodity wasted during the reference period at various stages from farm to retail level as in processing, storage and transport.*

Processing- *is the volume of the commodity used as inputs or raw material for manufacturing into food and non-food items.*

Export - *refers to all goods leaving the country which are properly cleared through the Customs.*

Net Food Disposable - *refers to the volume of food commodity available in its original (unprocessed) form for human consumption. This is usually equated or made equivalent to the quantity consumed. Net foods disposable (NFD) is the remaining balance after all the "use" parameters are taken into account. The net food disposable in per capita per year and in per capita per day are expressed in kilograms and grams, respectively.*

Ending Stock - *is the stock of commodity available at the end of the reference period. This includes stock held at the various levels, i.e., households, traders, government and commercial warehouses.*

2.2.3.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Food Balance Sheet	National level	1952	Various surveys and administrative-based reports	NSCB
Supply Utilization Accounts for Agriculture	National level	1990	Various surveys and administrative-based reports	BAS

…(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Annual per capita consumption	National and sub-national levels	1995, 1999-2000	Food Consumption Survey (FCS)	BAS
		2008-2009	Survey of Food Demand for Agricultural Commodities (SFD)	BAS
Self-sufficiency ratio	National level	1988	Various surveys and administrative records	BAS
Import dependency ratio	National level Selected commodities	1990	Various surveys and administrative records	BAS
Shares of food to total family expenditures	National level	1994	Family Income and Expenditures Survey (FIES)	NSO

**The year cited here refers to the start of available data series.*

2.2.3.3 Data Processing, Estimation and Revision Methodology

- Food Balance Sheet
- Supply Utilization Accounts
- Per Capita Consumption
- Self-Sufficiency Ratio (SSR) and Import Dependency Ratio (IDR)

A. Food Balance Sheet

Data Processing

The NSCB which compiles, analyzes and disseminates the Food Balance Sheet for the Philippines obtains the data inputs from various data sources and the major source agencies are BAS, NSO, Food and Nutrition Research Institute (FNRI) and specialized commodity agencies.

Estimation and/or Compilation Procedure

The estimation and/or compilation of these accounts is based on the following equations or formula:

$$TDS = Prod - CS + NI$$

where:

TDS - Total Domestic Supply
Prod - Production
CS - Change in Stocks
NI - Net Imports

CS = ES-BS

where:
CS – Change in Stocks
ES – Ending Stocks
BS – Beginning Stocks

NI = TI – TE

where:
NI – Net Imports
TI = Total Imports
TE – Total Exports

TDU = NAFS + NFU + PF

where:
TDU - Total Domestic Utilization
NAFS – Net Available Food Supply
NFU – Non-Food Utilization
PF – Processed for Food

NAFS = TDS – NFU –PF

where:
NAFS – Net Available Food Supply
TDS – Total Domestic Supply
NFU – Non-Food Utilization
PF – Processed for Food

$$APCFS(kg) = \frac{NAFS(mt)}{Pop'n} x1000\ kg$$

where:
APCFS - Annual Per Capita Food Supply
NAFS - Net Available Food Supply
Pop'n - Population

$$DPCFS\ (gm) = \frac{APCFS(kg)}{365} x1000gm$$

where:
DPCFS - Daily Per Capita Food Supply
APCFS - Annual Per Capita Food Supply

$$DPCNS = \frac{DPCFSxFR}{100}$$

where:

DPCNS - Daily Per Capita Nutrient Supply
DPCFS - Daily Per Capita Food Supply
FR - Factor Rate

B. Supply Utilization Accounts

Data Processing

The supply utilization accounts are generated using the MS Excel Application following the given formula and conversion ratios and parameters used.

Estimation and/or Compilation Procedure

The updating of SUA is based on the following conversion ratios and parameters:

- Conversion ratios for rice, livestock and poultry
- Conversion ratios were adopted for palay in terms of milling recovery rate and for livestock and poultry in terms of liveweight and dressed weight equivalents of meat and offals.
- Parameters used in the estimation of seeds, feeds, wastes and processing

Food Commodity

Estimation of Gross Supply (GS)

$$GS = BS + Prod + I$$

where:

GS - Gross Supply
BS - Beginning Stock
Prod - Production
I - Imports

Estimation of Net Supply Disposable (NSD)

$$NSD = GS - (E + EI)$$

where:

NSD - Net Supply Disposable
GS - Gross Supply
E - Exports
EI - Ending Inventory

Estimation of Net Food Disposable (NFD)

$$NFD = NSD - (F + S + W + FU + NFU)$$

where:

NFD - Net Food Disposable
NSD - net supply disposable
F - quantity used for feeds
S - quantity used for seeds
W - quantity lost/spoiled (waste)

FU - quantity processed for food use
NFU - quantity processed for non-food use

Estimation of Per Capita Net Food Disposable (NFD)

$$NFD(kg/yr) = \frac{total\ NFD}{Population}$$

$$NFD(grams/day) = \frac{NFD(kg/yr)}{365\ days} x1000$$

Non-Food Commodity

Estimation of Total Supply (TS)

$$TS = BS + Prod + I$$

where:

TS - Total Supply
BS - Beginning Stock
Prod - Production
I - Imports

Estimation of Domestic Use (DU)

$$DU = TS - (E + S + W)$$

where:

DU - Domestic Use
TS - Total Supply
E - Exports
S - Seeds
W - Waste

a. Conversion Ratios for Rice, Livestock and Poultry

Item	Equivalent/Conversion
RICE	Quantity of Palay X 0.654
CATTLE	
Liveweight	Number Slaughtered X 400 kilograms
Dressweight	Total Liveweight X 0.50
Offals	Total Liveweight X 0.0861
CARABAO	
Liveweight	Number Slaughtered X 370 kilograms
Dressweight	Total Liveweight X 0.50
Offals	Total Liveweight X 0.0861
HOG	
Liveweight	Number Slaughtered X 80 kilograms
Dressweight	Total Liveweight X 0.70
Offals	Total Liveweight X 0.1433
GOAT	
Liveweight	Number Slaughtered X 30 kilograms
Dressweight	Total Liveweight X 0.44
Offals	Total Liveweight X 0. 1433
CHICKEN	
Liveweight	Number Dressed X 1.45 kilograms
Dressweight	Total Liveweight X 0.77
DUCK	
Liveweight	Number Dressed X 1.30 kilograms
Dressweight	Total Liveweight X 0.75
EGGS	
Chicken	Fresh Eggs / 21 pieces/kilogram
Duck	Fresh Eggs / 15 pieces/kilogram

b. Parameters for Supply Utilization Accounts

Food Group	Seed	Feed and Waste	Processing	
			Food Use	Non- Food Use
1. Cereals				
Palay	75.00 (kg./ha)	6.5% of production		
Rice				4% of production
Corn	20.00 (kg./ha)	65% of production	5% of production	8.34% of production
2. Root crops				
Cassava		6% of production	17% of net supply	67% of net supply
Gabi	25.00 (kg./ha)	5% of production		
Pao/Galiang	9% of production	9% of production		
White potato	25.00 (kg./ha)	5% of production	25% of production	
Sweet potato	20.00 (kg./ha)	5% of production		
Tugui	9% of production	5% of production		
Ubi	25.00 (kg./ha)	4% of production		
Ampalaya	2.20 (kg./ha)	8% of net supply		
Asparagus		8% of net supply		
Bell pepper		5% of net supply		
Black pepper		5% of net supply		
Broccoli		8% of net supply		
3. Vegetables and Legumes				
Cabbage	3.70 (kg./ha)	8% of net supply		
Carrots		8% of net supply		
Cauliflower		8% of net supply		
Celery		8% of net supply		
Chayote	3.50 (kg./ha)	8% of net supply		
Cucumber	3.50 (kg./ha)	8% of net supply		
Eggplant	2.10 (kg./ha)	8% of net supply		
Garlic	12% of production	8% of net supply		
Ginger	0.50% of production	8% of net supply		
Gourd (Upo)	3.30 (kg./ha)	8% of net supply		
Habitchuelas	6.00 (kg./ha)	8% of net supply		
Mongo	4.50 (kg./ha)	0.5% of net supply		
Okra		8% of net supply		
Onion	7% of production	8% of net supply a/		
Patola	1.10 (kg./ha)	8% of net supply a/		
Peanut	4.00 (kg./ha)	0.5% of net supply	7% of net supply	
Pechay		8% of net supply		
Radish		8% of net supply		
Soybean	4.50 (kg./ha)	0.5% of net supply	73% of net supply	
Squash	1.00 (kg./ha)	8% of net supply		
Tomato	3.90 (kg./ha)	7% of net supply	15% of net supply	

a/ applied to native variety only

...(Continued)

Food Group	Seed	Feed and Waste	Processing	
			Food Use	Non- Food Use
4. Nuts				
Cashew	4.00 (kg./ha)	0.5% of net supply	0.25% of net supply	
Pili	4.00 (kg./ha)	0.5% of net supply	0.25% of net supply	
5. Fruits				
Atis		6% of net supply		
Avocado		6% of net supply		
Banana		6% of net supply	25% of net supply	
Caimito		6% of net supply		
Calamansi		6% of net supply		
Chico		6% of net supply		
Durian		6% of net supply		
Guyabano		6% of net supply		
Jackfruit		6% of net supply		
Lanzones		6% of net supply		
Mandarin		6% of net supply		
Mango		6% of net supply		
Mangosteen		6% of net supply		
Marang		6% of net supply		
Orange		6% of net supply		
Papaya		6% of net supply		
Pineapple		6% of net supply	44% of net supply	
Pomelo		6% of net supply		
Strawberry		6% of net supply		
Tiesa		6% of net supply		
Watermelon		6% of net supply		
6. Commercial Crops				
Cacao			1% of net supply	
Coconut	1% of production		40% of net supply	54% of net supply
Coffee		6% of net supply	23% of net supply	
Sugarcane			99% of production	
7. Livestock and Poultry				
Beef			10% of production	
Carabeef			0.1% of production	
Chevon				
Pork			1.2% of production	
Chicken (Dressed)				
Duck (Dressed)				
Chicken Egg	6% of production		2% of production	
Duck Egg	4% of production		2% of production	

…(Continued)

Food Group	Seed	Feed and Waste	Processing	
			Food Use	Non- Food Use
8. Non- Food Crops				
Abaca				
Cotton	4% of production			
Rubber				
Tobacco		10% of production		
9. Fish and Fishery Products				
Milkfish		3% of production	32% of production	
Roundscad		3% of production	32% of production	
Tilapia		3% of production		
Tuna		3% of production	32% of production	
Crab		1.5% of production		
Shrimps and Prawns		1.5% of production		
Mussel		1.5% of production		
Oyster		1.5% of production		

C. Annual Per Capita Consumption

Data Processing

Two (2) systems were developed for SFD; one was the Integrated Microcomputer Processing System (IMPS) version 3.3 and the other was the Census Survey Processing (CSPro) 4.0. The results of first round of SFD (August 2008) were processed using IMPS while the 2nd to 4th rounds were processed using CSPro. Although data capture and editing procedures were done using IMPS and CSPro, the tabulation programs were developed using COBOL software to facilitate the generation of output tables.

Estimation Procedure

Estimation of household-level food consumption (i.e. within and outside the household) considered the following points:

Total consumption was comprised of four (4) components as follows:

1. Food prepared at home and consumed at home by household members and guests
2. Delivered/take-out food consumed at home by household members and guests

3. Food prepared at home and consumed outside by household members and guests
4. Food prepared in food establishments and consumed outside by household members

The first three (3) components (A, B and C) were gathered directly from the respondents, while the fourth was derived based on the assumption that the food consumption pattern of household members within the household was more or less the same as the food consumption pattern of household members when they eat in food establishments. In formula terms, D is expressed as:

$$D = \left(\frac{A + B + C}{nm_h}\right) * \left(nm_f\right)$$

where:

nm_h

- Is the number of man-meals and man-snacks consumed by household member within the households

nmf

- Is the number of man-meals and man-made snacks consumed by household members in food establishments and

Food consumption within and outside the household = A+B+C+D

At the provincial (domain) level, estimates of total consumption were computed by direct expansion of corresponding household-level data across all samples. Per capita consumption was derived by dividing the estimated total consumption by total number of household members.

The same procedure was applied to other variables, that is, by direct expansion of household–level characteristics across all samples.

D. Self-Sufficiency Ratio and Import Dependency Ratio

Data Processing

Data inputs for the computation of self-sufficiency ratio (SSR) and import dependency ratio (IDR) are sourced from the Supply Utilization Accounts (SUA) which contains data on production, export and import.

Estimation Procedure

The formulas are as follows:

$$SSR = \frac{Production}{Production + import - export} x100$$

$$IDR = \frac{import}{Production + import + export} x100$$

2.2.3.4 Other Reference Information

1. A publication on The Food Balance Sheet of the Philippines contains a section on Technical Notes which includes concepts, estimation methodology and sources of basic data. The Technical Notes can also be accessed in the NSCB website.
2. The preparation of the Supply Utilization Accounts is backed up by the guidelines contained in the Handbook on Supply Utilization Accounts. This can be available to researchers upon request.
3. The results of the survey on food consumption are presented and analyzed in the BAS publication entitled Survey of Food Demand for Agricultural Commodities 2008-2009. This report consists of two volumes. The data can also be easily accessed at the BAS CountrySTAT website. The survey was provided with manuals such the Manual of Operations, Coding and Editing Guidelines and the Data Processing Manual. These manuals are available at the BAS and can also be accessed at BAS - Electronic Archiving and Network Services (BEANS).
4. Data on self-sufficiency ratio and import dependency ratio for selected agricultural commodities are presented and analyzed in Agricultural Indicators System's module on Food Sufficiency and Security.

2.2.4 Prices

2.2.4.1 Concepts, Definitions and Classifications

Agent - refers to the entity or person who is given cash advance by the trader, procures on behalf of the trader; adds the profit margin to the price at which the product was bought from the farmer. The agent does not take possession of the commodity. The agent maybe classified into; *a) Sales agent b) Procurement agent c) Consignment agent and d) Commission agent.*

Sales Agent - *is the one who negotiates the sale between the seller and the prospective buyer; does not use money or cash.*

Procurement Agent - *is the one who procures on behalf of a trader; may or may not have been given cash advance by trader for buying stocks; may be paid on salary, commission or sharing basis.*

Consignment Agent - *is the agent who sources commodity from supply areas where the commodity is entrusted to him/her by the owner for selling and pays owner only after the selling of the commodity.*

Commission Agent - *is the agent who acts as an intermediary between farmers and traders. He/she is paid a commission by the trader. He/she does not take possession of the commodity.*

Assembler - is a type of trader who sources and procures his/her stocks from contract growers or independent farmers in several barangays in a specific municipality, and transports the produce to a trading or market center. He/ She usually has agents or relatives responsible for procurement and assembly. Assemblers maybe classified into; a) Barangay assembler 2) Municipal assembler 3) Provincial assembler 4) Regional assembler and 4) Interregional assembler.

Barangay Assembler - *procures from only one barangay.*

Interregional Assembler - *procures from two or more regions.*

Municipal Assembler - *procures from two or more barangays.*

Provincial Assembler - *procures from two or more municipalities within a province, regardless whether or not it is the reference province.*

Regional Assembler - *procures from two or more province within the region.*

Average Prices - are estimated by adding all the prices collected for each commodity and dividing it by the number of respondents.

Base Period - usually a year, is the reference period of the index number. It is the period which the index is set to 100.

Consumer Price Index - is a measure of the average changes in the prices of a fixed basket of goods and services usually purchased by households for their consumption.

Consumers - are end-users; they acquire goods or services for direct use or ownership and not for manufacture or resale.

Distributor - refers to trader who sells commodities to other traders and consumers. Since his business is primarily to sell than to produce, he/she provides more services to the buyers than the suppliers. Distributors are classified into; a) Small distributor b) medium distributor and c) large distributor.

> **Small Distributor** - *is one who sells to retailers within the same market; may sell to several small eateries ("carinderias") nearby; handles only a small volume of goods.*
>
> **Medium Distributor** - *is one who sells to traders coming from other markets in the same province; may also sell to a few institutional buyers (hotel, restaurant, hospital, military cam); sells a larger volume than the small distributors.*
>
> **Large Distributor** - *is one who usually sells to traders from other market within and outside the province; may also sell to several institutional buyers; handles the largest volume among the three types of distributors.*

Ex-plant Price - buying price at the manufacturers' plant.

Farmgate Prices - refer to price received by farmers for the sale of their produce at the first point of sale, net of freight costs.

First Point of Sale - is the place of transaction for the farmers' produce and this could be within the production site (farm) or in the buying stations e.g. warehouses, rice mills, makeshift buying stations, permanent stalls. In case the first point of sale is outside the production site, the freight or transport expenses including market fee, labor for cargador (hauler), etc. shall be computed and deducted from the price received by the farmer.

Inflation Rate - is the rate of change in the weighted average prices of goods and services typically purchased by consumers.

Livestock "Oksyon" Market (LOM) - is a registered pooling place or ready market for livestock particularly large animals for slaughter. It is a trading center accredited by the government to operate livestock trading with the presence of marketing facilities such as weighing scale, holding pens, loud speaker, etc. and the services of the weighmaster and local government staff to record and supervise transactions.

Livestock/Poultry Handler- refers to any person or business entity that engages in the business of inter-provincial, or regional handling, transportation or distribution of livestock and poultry and its products (D.A. Administrative Order No. 03, series of 1997).

Pooling Place - is any place of business wherein livestock and poultry are offered for sale without the necessary animal market facilities and where transactions are conducted in an unorganized form.

Prevailing Price - is the modal price or the price that appears the most frequent among the prices collected.

Price- the amount paid in exchange for the commodity or service.

Price Range - the highest and lowest prices recorded within a given time in a market.

Price Spread - is the difference in prices from one level to another and is computed using the following:

> **Farm to Wholesale** - *is derived by subtracting the farm price of a given commodity from the wholesale price at the same period of time*;
>
> **Wholesale to Retail** - *is derived by subtracting the wholesale price of a given commodity from the retail price at the same period of time;*
>
> **Farm to Retail** - *is derived by subtracting farm price of a given commodity from the retail price at the same period of time.*

Producer Price Index (PPI) Basket - refers to a list of goods used to represent all goods. Commodities contributing 95% to total value of production were included with ranking done by commodity group and by region.

Producer Price Index for Agriculture - refers to the index numbers which show the change over time (relative to a base period) on the prices received by farmers for the sale of their agricultural products.

Retail Prices - are the prices at which retailers sell their goods or commodities to consumers in the marketplace.

Traders - are those who buy and sell goods or commodities.

Wholesale prices - prices which can be either wholesale buying and/or wholesale selling prices

> **Wholesale Buying Price** - *is the price that traders pay for commodities they buy in bulk from farmers/raisers/fishermen and fellow traders*
>
> **Wholesale Selling Price** - *refers to the price at which traders or distributors sell their commodities in bulk to retailers and other distributors*

Wholesale Market - is a place where large volumes of commodities coming from production areas are assembled, traded and transported to other markets within and outside the province. This type of market involves heavy volume of transactions between sellers and buyers of goods for further distribution to other areas/markets

Wholesalers - are those who buy in bulk from farmers/raisers/fishermen and fellow traders.

2.2.4.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Average monthly prices of selected agricultural commodities	National and sub-national levels	1969 (farmgate, wholesale and retail prices)	Farmgate Prices: Farm Prices Survey	BAS
			Market *(Wholesale and Retail)* Prices: Integrated AGMARIS-AMNEWSS	BAS
Producer Price Index for Agriculture	National and sub-national levels	1989-1995 (base year = 1988)	Farmgate Prices: Farm Prices Survey	BAS
		1995 -2007 (base year = 1994)		
		2001-2006 (base year = 2000)	Volume of Production: *see data sources for crops and livestock and poultry and fishery production*	BAS

…(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
		2007-2011 (base year = 2006)	Volume of Production	
Consumer Price Index	National and sub-national levels	1980-2011 (base year = 2000)	Prices of Agricultural Commodities	BAS
		2012 (base year = 2006)	Prices of all other commodities and weights used	NSO
Inflation Rate for All Income Household	National level	2000-2011 (base year= 2000)	Consumer Price Index for All Income Household	BSP and NSO
		2012 (base year = 2006)		

**The year cited here refers to the start of available data series.*

2.2.4.3 Data Processing, Estimation and Revision Methodology

- Farm Prices
- Market Prices for Agricultural Commodities
- Producer Price Index (PPI) for Agriculture

A. Farm Prices

Data Processing

Decentralized processing of survey returns is done for the Farm Prices Survey (FPS) where a customized IMPS-based program is installed in every POC. Editing, encoding and generation of monthly provincial reports are done in the POCs. Prior to encoding, the accomplished questionnaires are manually edited for validity and consistency. The data files undergo validation using an editing program based on pre-set validation criteria such as consistency check, range check and acceptability and validity of data.

The clean data file will then serve as input to the tabulation programs to come up with the monthly provincial reports. These reports, together with the clean data, are submitted to the BAS - Central Office in soft and hard

copies for national consolidation. National consolidated reports are generated at the Central Office.

Estimation and/or Compilation Procedure

At the provincial level, the estimate is weighted by volume sold, while at the regional/national level, estimates are weighted by volume of production. The following are the formula for the different levels of estimates.

Provincial Farmgate Price

$$\bar{Y}_{ik} = \frac{\sum_{j-1}^{n}\left[\left(Y_{ij}\,X_{ij}\right) - \left(Z_{ij}\right)\right]}{\sum_{j-1}^{n} X_{ij}\,W_{ij}}$$

where:

Y_{jj} - *refers to the price per local unit of the j^{th} commodity of the j^{th} sample respondent*

X_{jj} - *refers to the total quantity sold in local unit of the j^{th} commodity of the j^{th} sample respondent*

Z_{jj} - *refers to the freight charges/total transport cost of the total quantity sold of the j^{th} commodity of the j^{th} sample respondent*

W_{jj} - *refers to the weight per local unit of the j^{th} commodity of the j^{th} sample respondent*

n - *refers to the number of sample respondents of the j^{th} commodity of the k^{th} province*

National/Regional Farmgate Price

$$\hat{Y}_{Phil} = \frac{\sum_{k=1}^{N}(\bar{Y}_{ik}\,X_{ik})}{\sum_{k=1}^{N} X_{ik}}$$

where:

$\bar{Y}_{ik}$ - *refers to average farmgate price per national unit of the j^{th} commodity in the k^{th} province*

X_{ik} - *refers to the total production during the quarter of the previous yearin the national unit of the j^{th} commodity in the k^{th} province*

N - *refers to the total number of producing provinces nationwide of the j^{th} commodity*

The computation for Regional Farmgate Price follows the same procedure as that for the National Farmgate Price but with reduced N which is limited only to the provinces in the particular region.

B. Market Prices for Agricultural Commodities

Data Processing

The AGMARIS-AMNEWSS utilizes AGMARIS 1.0, a computerized data processing system for prices developed using MS ACCESS and Visual Basic. It is a user-friendly system and the first version developed under the Windows-based platform -which aims to facilitate the aggregation and computation of averages for wholesale and retail prices. Processing is decentralized at the POCs and is done right after the daily data collection and review to satisfy the needs of the Market News Service (MNS). The monthly summaries or the Price Monitoring Service (PMS) forms are submitted to CO in soft and hard copies within the 1st week of the following month for consolidation. The Provincial Processing Officer (PPO) is responsible for checking the generation of the MNS and the PMS.

Estimation and/or Compilation Procedure

Estimates for the provincial, regional and national prices are in simple averages using the following formula:

$$Provincial\ Average\ Price = \sum \frac{(P_1 + P_2 + P_{3\ldots} + P_i)}{(N_1 + N_2 + N_{3\ldots} + N_i)}$$

where:

Provincial average price - is the sum of all prices collected in all markets in the province over the total number of respondents

$P_1 P_2 P_3$ and P_j - total price collected in market 1,2,3 and j^{th} market.

$N_1 N_2 N3$ and N_j - number of respondents interviewed in market 1,2,3 and j^{th} market.

$$Regional\ Average\ Price = \sum \frac{(P_{a1} + P_{a2} + P_{a3\cdots} + P_{ai})}{(N_{a1} + N_{a2} + N_{a3\cdots} + N_{ai})}$$

where

Regional average price - is the sum of all the prices collected in all provinces in the region over the total number of respondents

$P_{a1}\, P_{a2} P_{a3}$ *and* P_{ai} *- total price collected in province 1,2,3 and* j^{th} *province*

$N_{a1}\, N_{a2} N_{a3}$ *and* N_{ai} *- number of respondents interviewed in province 1,2,3 and* j^{th} *province*

$$National\ Average\ Price = \sum \frac{(P_{r1} + P_{r2} + P_{r3\cdots} + P_{ri})}{N_{r1} + N_{r2} + N_{r3\cdots} + N_{ri}}$$

where:

National Average Price - is the sum of all the prices collected in all provinces over the total number of respondents

$P_{r1} P_{r2} P_{r3}$ *and* P_{ri} *- total price collected in region 1,2,3 and* j^{th} *region.*

$N_{r1}\, N_{r2}\, N_{r3}$ *and* N_{ri} *- number of respondents interviewed in region 1,2,3 and* j^{th} *region.*

In case of computer breakdown or AGMARIS program failure at the POC, collected data must follow consolidation procedures. The Market Reporter (MR) with the help of the PPO will compute for the aggregate daily prices to arrive at the average monthly price in national unit for each of the commodities at the provincial level.

C. Producer Price Index (PPI) for Agriculture

Data Processing

The compilation of regional and national PPIs is done at the Central Office. Production and price data obtained from different units are keyed-in an MS Excel worksheet to come up with semi-annual and annual indices.

Estimation and/or Compilation Procedure

PPI for agriculture adopts the theoretical Paasche Formula where current volume of production is used as the weighting factor. In its aggregative form, it is expressed as follows:

$$PPI = \frac{\sum P_t Q_t}{\sum P_0 Q_t}(100)$$

where:

P_t = *price in the current year*

P_o = *Price in the base year*

Q_t = *volume of production in the current year*

For 2001-2006 series, the base year is 2000, while for 2007-2011 series the base year is 2006.

PPIs for agriculture are computed in semi-annual basis; two (2) months after the reference semi-annual period for the national and regional PPIs. Average semi-annual prices are computed by adding the six (6) average monthly prices and dividing the result by six (6). The volume of production for the current period is used as weights in generating the index for commodity groups and for the whole agriculture sector.

For the annual index, the total semi-annual values are added to account for the year's total values.

Selection of commodities in the market baskets

The commodities included in the current PPI basket are based on the value of production of all agricultural commodities in 2006. Commodities contributing 95 percent to total value of production were included with ranking done by commodity group and by region.

Procedures in selecting commodities for the Regional Market Basket:

a. *Compile data on production and price of agricultural commodities*
b. *Compute the individual total values of all commodities (volume of production x average farmgate price)*
c. *Rank the commodities by group according to their value*
d. *Establish the cut-off point at ninety- five percent per commodity group*

e. Validate the baskets through the commodity/subject matter specialists (PASOs and RASOs)
f. Prepare the "final" market baskets

Market basket composition

The composition of the PPI basket has been revised based on harmonized price and production data systems considering the regularity of reporting and frequency of monitoring. Varietal disaggregation for some commodities has also been taken into consideration in harmonization. Selected aquaculture fishery products have also been included in the revised basket.

Seasonality of price and production data

If there is a price but no production data, the semi-annual PPI available will be considered as the annual PPI.

In case of seasonal commodities where both production and prices data are available only during certain periods of the year, PPI is not computed. During off-season, the available PPI will also be the annual PPI.

2.2.4.4 Other Reference Information

1. The BAS produces regular weekly and monthly price updates. These are translated into memoranda submitted to the Office of the Secretary, Department of Agriculture. These are released on Mondays to provide data users with more timely statistics.
2. Researchers are encouraged to visit the main BAS website (http://bas.gov.ph) – Price and Trade menu, for the weekly and monthly price updates which are available in PDF file format.

2.2.5 Fertilizer and Pesticides

2.2.5.1 Concepts, Definitions and Classifications

Domestic Sales - refer to total quantity of fertilizer intended for domestic use. These do not include the raw materials used for further processing. These involve marketing and distribution of imported and locally manufactured chemical fertilizers.

Fertilizer - is any substance, solid or liquid, natural or synthetic, single or combination of materials that is applied to the soil or on the plant to

provide one or more of the essential elements to improve plant nutrition, growth, yield or quality, or for promoting a chemical change that enhances plant nutrition and growth.

Fertilizer Prices (Dealers' Prices) - are the selling prices of dealers of agricultural inputs and/or fertilizers. Prices are quoted in Philippine currency (peso) per sack of 50 kilograms.

Fertilizer Production - is the total volume of fertilizer manufactured by the local fertilizer company.

Fungicides- are chemicals which control fungi that may cause plant diseases. There are two types of fungicides a) protective fungicides and b) eradicant fungicides.

> **Eradicant Fungicides** - *are those with control fungi which are already established in the host plant.*
>
> **Protective Fungicides** - *are those applied before the invasion of the disease and will destroy any spores as they germinate.*

Insecticides - are chemical compounds used to control insects. These are subdivided by different modes of actions as follows; a) contact insecticides b) Stomach poison c) Systemic insecticides and d) Fumigants.

> **Contact Insecticides** - are those that kill primarily through direct contact with the insect.
>
> **Fumigants** - *are insecticides which vaporize and effect control by contacting the insect in vapor form.*
>
> **Systemic Insecticides** - *are compounds which, when applied to plants, are absorbed by and flow through the system of that plant in sufficient quantity to protect it against the insect (at points remote from the point of application).*

Pesticides - are substances or any mixtures of substances intended for preventing, destroying or controlling pests, including vectors of human or animal diseases, unwanted species of plants or animals causing harm during or otherwise interfering with the production, processing, storage, transport or marketing of food, agricultural commodities, wood or wood products, or animal feed stuffs.

Prices Paid by Farmer for Pesticides - refer to the buying prices of farmers for pesticides such as weedicides, fungicides, insecticides and rodenticides. Prices are quoted in Philippine currency (peso) per kilogram for solid type and peso per liter for liquid type of farm chemical.

Rodenticides -are chemicals used to control rodents.

Weedicides/Herbicides - are chemical compounds which are used to kill or inhibit undesirable plant growth. These may be sub-divided according to their selectivity and mode of action as follows;

Contact Herbicides - *are those that kill primarily by contact with plant tissue rather than as a result of translocation. Only the portion of the plant that has been in contact with these pesticides is directly affected, and the effect is usually rapid.*

Translocated Herbicides - *are those that act more slowly, taking perhaps several weeks for maximum effect. These are also capable of being moved by the plant following absorption, away from the site of application.*

2.2.5.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Fertilizer				
Domestic production	National level	1990	Reports of Fertilizer Companies	FPA
Imports and exports	National level	1990	Imports: Reports of Fertilizer Companies, NSO and VAT Certification Issuances of Fertilizer and Pesticide Authority (FPA)	FPA
Sales	National level	1990	Reports of Fertilizer Companies	FPA
Prices	National and sub-national levels	1989	Weekly Cereals and Fertilizer Price Monitoring component of Integrated AGMARIS-AMNEWSS	BAS

…(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Pesticides				
Prices	National and sub-national levels	2000	Prices paid by farmers for agricultural inputs (Farm Prices Survey)	BAS

2.2.5.3 Data Processing, Estimation and Revision Methodology

For Fertilizer

The BAS maintains a data system for fertilizer prices. There is weekly data collection of prices across trading centers of the country. The respondents are input dealers. Simple averages of prices by grade by trading center are being computed.

For Pesticides

Decentralized processing of survey returns is done for the FPS of pesticides where a customized program, which is IMPS-based, is installed in every POC. Editing, encoding and generation of monthly provincial reports are done in the POCs. Prior to encoding, the accomplished questionnaires are manually edited for validity and consistency. The data files undergo validation using an editing program based on pre-set validation criteria such as consistency check, range check and acceptability and validity of data.

The clean data file will now serve as input to the tabulation programs to come up with the monthly provincial reports. These reports, together with the clean data file, are submitted to the BAS - Central Office in soft and hard copies for national consolidation.

Monthly prices of pesticides are consolidated to come up with the annual average prices by pesticide type, form and brand names at the provincial and regional levels.

2.2.5.4 Other Reference Information

1. The BAS submits a memorandum that contains a bulletin on fertilizer prices. This is being prepared on a monthly basis. There are other reports that contain data and information regarding fertilizers namely; Rice and Corn Situation and Outlook Report, Agricultural

Indicators System's module on Inputs and reports on Costs and Returns of Production (palay, corn, other crops, milkfish, tilapia).

2. On an adhoc basis, the BAS conducts the Costs and Returns Survey (CRS). This serves as a very good source of data on pesticides. Statistical reports on the results of these surveys are available at BAS.

2.2.6 Land Use

2.2.6.1 Concepts, Definitions and Classifications

Area Harvested - refers to the actual area from which harvests are realized. This excludes crop areas which were totally damaged. It may be smaller than area planted. In crop statistics, this applies to temporary crops.

Area Planted - refers to the actual physical area planted. This generally applies to area reported for permanent crops and multi-harvest temporary crops.

Effective Area Harvested - is the actual area which is counted as many times as it was planted and harvested to crops during the reference period. This concept applies to the harvest area reported for monoharvest temporary crops such as rice, corn, root crops and tubers and pechay.

Irrigated Area - is the total area within the service area of an irrigation system served in a particular season - wet (1stcrop) and (2nd crop) seasons including any third crop. This refers to the area served during the wet season plus any area submerged during the wet season that is served in the dry season. (As used by the National Irrigation Administration (NIA))

Irrigated Area for Palay - refers to the area with irrigation facilities supplying water through artificial means like gravity, force/power, pump, etc. Irrigated area becomes rainfed only, when the irrigation system is no longer operational for the past two (2) years and beyond repair and there is no plan of irrigating the farm (as used in the BAS data system).

Irrigated Palay - is palay crop that requires standing water for its normal growth, not confined to lowland but also to high places where paddies are built for planting rice, requires irrigation water made available through artificial means (gravity, force, power pumps, etc.).

Irrigation - refers to the controlled application of water to arable lands to supply water requirements not satisfied by rainfall or it is the artificial

method of conveying water to the plant which the plant needs for its growth.

Communal Irrigation Projects/Systems - *are small-scale schemes generally with service area of less than 1,000 hectares. These projects/systems are constructed by NIA with the participation of farmer-beneficiaries thru their Irrigators Association (IA). The operation and maintenance (O&M) of CIS is turned over IA upon project completion. Farmers amortize the chargeable cost for a period not exceeding 50 years at zero interest. The repayment scheme is pre-arranged and acceptable to both NIA and the IA*.

National Irrigation Projects/Systems - *are large and medium scheme projects constructed by NIA usually with service area of more than 1,000 hectares. These projects/systems are basically operated and maintained by National Irrigation Administration (NIA). Portions or whole systems maybe jointly managed by NIA and irrigators' associations (IA).*

Private Irrigation Systems - *refer to private initiatives which are constructed with or without technical assistance from NIA or other government agencies.*

Potential Irrigable Area (PIA)- is the maximum area which an irrigation project can serve considering the extent of arable lands and the available water supply.

Service Area - refers to its area of an irrigation system that is presently provided with irrigation and drainage facilities and irrigation and drainage service could already be rendered.

Land Covered with Wood and Forest - is a part of the holding that is wood or forestland, natural or planted. Forest concessions are not intended in this category.

Land Temporary Fallow - is land which is purposely allowed to stay idle for a period of at least one year or at most 5 years in order to recover its fertility, after which period it is again planted to temporary crops.

Land under Permanent Crops - is land planted to crops that occupy the land for a long period of time and do not need to be replaced after each harvest like fruit trees.

Land under Permanent Meadows and Pastures - is land used permanently or intended to be used permanently for more than 5 years for the purpose of growing herbaceous forage crops, either seeded or cared for existing naturally.

Land under Temporary Crops - is land planted to crops that are grown seasonally and whose growing cycle is less than one year and which must be sown or planted again for production after each harvest. Land which is planted with herbaceous forage crops mainly for sale is classified as under temporary crops even if part of the produce is used as feeds for livestock. (Some temporary crops thrive beyond one year).

Other Forms of Land Use - include lands occupied by pigpen, poultry house, fishpond, wasteland and undeveloped land potentially productive for agriculture and other lands not included in the preceding land use classification.

Rainfed Palay - is palay crop that depends solely upon rainfall for its water supply; usually planted through transplanting or direct seeding in fields with dikes that retain water. There may be dikes in the field to hold water in the case of lowland-rainfed, or none in the case of upland palay.

2.2.6.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Area Planted/Area Harvested *(other than palay and corn)*	National level	1982	Crops Production Survey (CrPS)	BAS
	National and sub-national levels	1990	Records from concerned agencies for the following crops:	
			Sugarcane - *for canes milled for centrifugal sugar*	SRA
			Fiber Crops	FIDA
			Cotton	CODA
Farm area	National and sub-national levels	1960	Census of Agriculture	NSO
Irrigated area	National and sub-national levels	1988	Records of the Irrigation Systems	NIA

**The year cited here refers to the start of available data series.*

2.2.6.3 Data Processing, Estimation and Revision Methodology

The data on area irrigated are presented in terms of levels and percentage distribution by type of irrigation system.

On the other hand, the data processing for area planted/area harvested of crops is earlier presented as an integral part of the production data system for palay and corn and other crops *(please refer to 2.2.1.3).*

The BAS does not do any further processing on the data on area of farms which are sourced from NSO. The data are presented in terms of levels and percentage distribution by type of utilization.

2.2.6.4 Other Reference Information

1. Data on area planted/area harvested are presented and analyzed in the BAS reports on Palay and Corn Situation and Outlook Report, Commodity Situationers and Agricultural Indicators System's module on Output and Productivity and Selected Statistics on Agriculture.
2. Data on farm area by type of utilization and irrigated area by type of irrigation system are contained in BAS report on Agricultural Indicators System's module on Agricultural Structure and Resources.

2.2.7 Labor and Employment

2.2.7.1 Concepts, Definitions and Classifications

Agricultural Wage Rate - is an indicator of progress and welfare of farm workers. It refers to the amount paid to the farm workers according to the agreed basis of payment.

Employment - persons in the labor force who are reported either at work or with a job or business although not at work during the reference week.

Nominal Wage Rate - is the amount of wage a farm worker actually received and is expressed at current prices.

Real Wage Rate - is the nominal wage deflated by the current consumer price index.

2.2.7.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Total employment	National and sub-national levels	1990	Labor Force Survey	NSO
Employment in agriculture	National and sub-national levels	1990	Labor Force Survey	NSO
Nominal and real wage rates in agriculture	National and sub-national levels	1985	Agricultural Labor Survey	BAS

**The year cited here refers to the start of available data series.*

2.2.7.3 Data Processing, Estimation and Revision Methodology

A. Labor and Employment

Data on employment are sourced from the NSO and are being used by the agricultural statistical system to monitor the development of the country's labor market particularly in the agriculture sector. The BAS does not do any further processing of data from the source.

B. Wage Rates of Agricultural Workers

Data Processing

Survey returns of the Agricultural Labor Survey (ALS) are processed using a customized DOS-based program developed by the Information and Communications Technology Division (ICTD). The software used in developing the ALS computerized system is the Integrated Microcomputer Processing System (IMPS) by the U.S. Bureau of Census and Cobol.

Central processing is applied for the ALS twice a year because ALS is conducted on a semi-annual basis. The POC is responsible for data collection only and some manual editing. The accomplished questionnaires are submitted to the Central Office and received by the Records Management Section for recording purposes then released to the Statistical Operations Coordination Division (SOCD) for counter editing and coding. Manual editing involves the checking of data items based on pre-set criteria, data ranges, completeness of related items, and consistency with other data items. Coding is the assignment of alphanumeric codes to questionnaire items to facilitate data entry.

The manually edited and coded questionnaires are submitted to the ICTD for encoding, computerized editing and generation of output tables.

In computerized editing, a validation program is used to check the validity of the encoded data using the same criteria set in the manual editing. The data file undergoes computerized editing to capture errors that escaped manual editing. The errors are reflected in error lists. Said lists will be verified vis-à-vis the questionnaires. The data file will be updated based on the corrections made. Editing and updating are performed iteratively until a clean, error-free data file is generated.

The clean provincial data files are then merged and consolidated in preparation for output table generation. Output tables generated have regional and national levels of disaggregation by crop.

Estimation and/or Compilation Procedure

Nominal Wage Rate Estimation for Palay, Corn, Coconut and Sugarcane

The average wage rate is computed at the regional level. For the rth region r, the estimate of the average wage rate is obtained by taking the sum of the amounts paid to laborers for all provinces (the numerator) and dividing it by the sum of mandays for all provinces in the same region (the denominator).

Real Wage Rate Estimation for Palay, Corn, Coconut and Sugarcane

$$RWR_t = \frac{NWR_t}{CPI_t}\ x100\%$$

where:

VR_t *-real wage rate of a given year*

NWR_t *-nominal wage of rate of a given year*

CPI_t *-Consumer Price index of a given year*

Wage Rate Estimation for Agriculture

To arrive at the average wage rate for agriculture, wage relatives by sector or commodity are weighted by the number of farms by type. For purposes of establishing agricultural wage rates, only farms used in the production of palay, corn, coconut and sugarcane obtained from the 2002

Census of Agriculture (CA) are included and are equated to 100 percent. Thus,

$$q_t = \frac{N_i}{N}$$

where:

q_t = *weight of the* ^{jth} *crop*

$$i = \begin{cases} \text{p, palay} \\ \text{c, corn} \\ \text{cn, coconut} \\ \text{s, sugarcane} \end{cases}$$

N_i - *number of the* ^{jth}*crop*

N - *total number of farms for the four crops*

Note that: $\sum q_t = q_p + q_t + q_{cn} + q_s = 1$

2.2.7.4 Other reference Information

1. Data on employment and agricultural wage rates are also presented and analyzed in the Agricultural Indicators System's modules on Population and Labor Force and on Inputs.
2. A report entitled "Trends in Agricultural Wage Rates" also contains the data on agricultural wage rates.
3. Researchers are also encouraged to visit the NSO website to check on the metadata for the Labor Force Survey (LFS). Meanwhile, the survey instruments for the Agricultural Labor Survey (ALS) are available at the BAS.

2.2.8 Costs and Returns of Production in Agriculture

2.2.8.1 Concepts, Definitions and Classifications

Cash Costs - refer to direct cash outlays or cash payments for the use of different factors of production such as hired labor, fertilizers, chemical, etc.

Non-Cash Costs - are expenditures which are paid in kind. Valuation is by means of the prevailing prices in the community. Generally, these non-cash costs represent the portions of the farmer's production that serve as payments for the use of particular factors of production.

Imputed Costs - are expenditures that do not involve actual outlays in cash or in kind; they represent the opportunity costs of using owned resources in

a particular activity and are given by the values of the best alternative uses foregone.

Cost Items

Depreciation - *cost of wear and tear of farm tools and equipment, machinery and other farm facilities and structures. The straight line method is used in computing for depreciation where the cost of acquisition is divided by the estimated life span of farm equipment.(Imputed cost)*

Electricity - *covers payment for electricity consumed in the production process.(Cash costs)*

Fertilizer - *any substance, solid or liquid, inorganic or organic, natural or synthetic, single or combination of materials that is applied to the soil or on the plant to provide one or more of the essential elements to improve plant nutrition, growth, growth, yield or quality, or for promoting a chemical change that enhances plant nutrition and growth.(Cash, Non-cash or Imputed cost)*

Food Expenses - *expenditures incurred in providing food to farm laborers.(Cash costs)*

Fuel and Oil - *the cost incurred for the use of gasoline, oil, and other related inputs.(Cash or Imputed cost)*

Interest on Operating Capital - *cost of capital foregone for the purchase of seeds, fertilizers, chemicals and payment for hired labor; this is derived by multiplying the total cash outlays by the prevailing lending rate.(Imputed cost)*

Interest Payment on Loan - *payment for the interest on borrowed capital used in the farm operations.(Cash or Non-cash cost)*

Irrigation Fee - *payment for irrigation services reported by the sample farmers during the reference period.(Cash or Non-cash cost)*

Labor, Exchange - *the work done by farm laborers in exchange (or as payment) to the work done by the farm operator and household members outside his own farm.(Imputed cost)*

Labor, Family - *labor rendered by the farmer's family members who take part in any production activities. Mandays of labor are valued at prevailing wage rate in the locality.(Imputed cost)*

Labor, Hired - *labor rendered by a person who is paid by the farm operator. Payment of wages is either in cash or in kind on the agreed basis of payment. Hired labor includes man or animal or machine or any combination with man-labor.(Cash or Non-cash cost)*

Labor, Operator - *imputed wages as payment to labor contributed by the operator. Mandays of labor are valued at prevailing wage rate in the locality. (Imputed cost)*

Land Tax - *amount of tax paid by the owner-operator for the farm land. (Cash cost)*

Landowner's Share - *portion of the farmer's production that goes to the owner of farm land based on the agreed sharing system. (Non-cash cost)*

Pesticides - *all types of yield-protecting form of chemicals purchased and paid in cash by the farmer. (Cash, Non-cash or Imputed cost)*

Rental - *payments for the use of land, machine, animal, tools and farm machineries*

Rental Value of Owned Land - *imputed cost which is derived by asking the farmer how much would be the annual value of the land if it will be rented.(Imputed cost)*

Repairs - *cost incurred for all repairs and improvements made on tools and equipment and other facilities. (Cash cost)*

Seeds/Planting Materials - *plant materials used for sowing purposes for the production of food, fodder, oil, industrial crops, vegetable, fruit flower, lawn and tree crops and include vegetative parts and/or organs used for propagating the crops/species.(Cash, Non-cash or Imputed cost)*

Sheller/Harvester/ Thresher's share - *portion of the farmer's production that serves as payment to farm laborers who perform the harvesting, threshing and shelling activities.(Non-cash cost)*

Soil Ameliorants - *elements placed or mixed into the soil to replenish depleted soil nutrients for better plant growth. (Cash, Non-cash or Imputed cost)*

Transport Cost of Inputs - *expenditures incurred in transporting farm inputs to the production sites. (Cash cost)*

Fixed Costs- are costs that do not change when the quantity of output changes.

Variable Costs- are costs that change as output changes.

Gross Returns- is the gross value of production, it is derived by multiplying total volume of production by the farmgate or producer price.

Mandays- conceptually, one manday is equivalent to eight (8) hours of work. To compute for mandays, multiply number of days by number of hours worked per day and divide the result by eight (8).

2.2.8.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Production costs and returns	National Regional	2002 palay (paddy rice) and corn (maize)	Costs and Returns Surveys and other administrative-based reports	BAS
	National	1996 (years covered vary among commodities)		

**The year cited here refers to the start of available data series.*

2.2.8.3 Data Processing, Estimation and Revision Methodology

Data Processing

Data on costs and returns of production in agriculture are generated through the conduct of surveys. The results of the surveys serve as benchmark data for updating the costs and returns structure during non-survey years.

A. For the Survey-Based Estimates (Benchmark Data)

Data gathered from the Costs and Returns Surveys (CRS) of some commodities are processed using the Integrated Microcomputer Processing System (IMPS). Other CRS make use of MS Excel Application. These softwares are used for data entry and generation of output tables (Refer to the metadata of Costs and Returns Survey).

B. For the Updated Estimates

Updating of the production costs and returns data is done manually. The complete cost structures and profitability measures are presented by nature of costs incurred, i.e. cash costs, non-cash costs and imputed costs. The established costs and returns structure is updated by using the current levels of production per hectare and prices of inputs and outputs. The current production per hectare levels are used to derive gross returns and average costs and returns per kilogram of output.

Estimation and/or Compilation Procedure

Data on the costs and returns are updated using a given set of assumptions and procedures. These are summarized in the following tables:

A. Palay (Paddy Rice) and Corn (Maize)

ITEM	BASIS/PROCEDURE
1. Cost of seeds/planting materials *(cash and non-cash)* 2. Irrigation fee 3. Lease rental 4. Rental value of owned land 5. Landlord's share	movement of the farmgate price
6. Harvester/ thresher/ sheller's share	movement of the gross value of production per hectare
7. Cost of fertilizer Solid	For 2002 to 2007- quantity used coming from the 2002 Survey of Costs and Returns of Palay and Corn Production multiplied by the retail price of fertilizer from the Weekly Cereals and Fertilizer Price Monitoring
	For 2008 - quantity used coming from the Palay and Corn Production Survey multiplied by the retail price of fertilizer by grade from the Weekly Cereals and Fertilizer Price Monitoring
	For 2009 to 2011 – quantity used from the 2009 Survey of Costs and Returns of Palay and Corn Production multiplied by the average price of selected pesticides from the the Weekly Cereals and Fertilizer Price Monitoring
Liquid	movement of the retail price of fertilizer

...(Continued)

ITEM	BASIS/PROCEDURE
8. Cost of pesticide Solid Liquid	movement of the retail price for selected pesticides
	For 2002 to 2008 - quantity used from the 2002 Survey of Costs and Returns of Palay and Corn Production multiplied by the average price of selected pesticides from the Monthly Farm Price Survey
	For 2009 to 2011 – quantity used from the 2009 Survey of Costs and Returns of Palay and Corn Production multiplied by the retail price of selected fertilizer from the Monthly Farm Price Survey
9. Soil ameliorants and other inputs	movement of the retail price of fertilizer
10. Cost of mulching materials	movement of the retail price of fertilizer
11. Labor costs (hired, unpaid operator and family and exchange labor)	For 2002 to 2008 - number of mandays coming from the 2002 Survey of Costs and Returns of Palay and Corn Production multiplied by the nominal wage rate from the Agricultural Labor Survey
	For 2009 to 2011 - number of mandays coming from the 2009 Survey of Costs and Returns of Palay and Corn Production multiplied by the nominal wage rate from the Agricultural Labor Survey
12. Rentals (tools, equipment, machine and animals)	movement of agricultural wage rates
13. Food cost	movement of CPI for food
14. Transport cost	movement of CPI for transport
15. Fuel and oil	movement of CPI for fuel and oil
16. Repair cost	movement of CPI for minor repairs
17. Interest on crop loans	increase of 10 percent per annum based on the average 5-year interest rate for agricultural loans
18. Other production costs	movement of CPI for all items
19. Depreciation cost	increase of 10 percent per annum based on the FAO normal rate of obsolescence for tangible fixed assets
20. Interest on operating capital	based on the Bangko Sentral ng Pilipinas (BSP) annual average lending rates percentage of cash costs paid for seeds, fertilizer, chemicals and hired labor
21. Land tax	increase of one (1) percent per annum

B. Other Crops

ITEM	BASIS/PROCEDURE
1. Cost of seeds/planting materials *(cash and non-cash)* 2. Irrigation fee 3. Lease rental 4. Rental value of owned land 5. Landlord's share	movement of the farmgate prices
6. Harvester/ thresher/ sheller's share	movement of the gross value of production per hectare
7. Cost of fertilizer Solid	For 2002 to 2008 - quantity used coming from the 2002 Survey of Costs and Returns multiplied by the current retail price of fertilizer by grade
	For 2009 to 2011 - quantity used coming from the 2009 Survey of Costs and Returns multiplied by the current retail price of fertilizer by grade
Liquid	movement of the retail price of fertilizer
8. Cost of pesticide Solid	movement of the retail price for selected pesticides
Liquid	For 2002 to 2008 - quantity used coming from the 2002 Survey of Costs and Returns multiplied by the current retail price of selected pesticides
	For 2009 to 2011 - quantity used coming from the 2009 Survey of Costs and Returns multiplied by the current retail price of selected pesticides
9. Soil ameliorants and other inputs	movement of the retail price of fertilizer
10. Cost of mulching materials	movement of the retail price of fertilizer
11. Labor costs (hired, unpaid operator and family and exchange labor)	For 2002 to 2008 - number of mandays coming from the 2002 Survey of Costs and Returns multiplied by the current agricultural wage rates
	For 2009 to 2011 - number of mandays coming from the 2009 Survey of Costs and Returns multiplied by the current agricultural wage rates
12. Rentals (tools, equipment, machine and animals)	movement of agricultural wage rates
13. Food cost	movement of CPI for food
14. Transport cost	movement of CPI for transport
15. Fuel and oil	movement of CPI for fuel and oil
16. Repair cost	movement of CPI for minor repairs

…(Continued)

ITEM	BASIS/PROCEDURE
17. Electricity cost	movement of CPI for light
18. Interest on crop loans	increase of 10 percent per annum
19. Other production costs	movement of CPI for all items
20. Depreciation cost	increase of 10 percent per annum
21. Interest on operating capital	based on the Bangko Sentral ng Pilipinas (BSP) annual average lending rates percentage of cash costs paid for seeds, fertilizer, chemicals and hired labor
22. Land tax	increase of one (1) percent per annum

C. Milkfish

ITEM	BASIS/PROCEDURE
1. Stocking materials (fry, fingerlings)	movement of farmgate prices
2. Fertilizer Organic Inorganic	movement of the retail prices of all fertilizers
	For 2002 to 2008 - quantity used coming from the 2002 Survey of Costs and Returns multiplied by the current retail price of fertilizer by grade
	For 2009 to 2011 - quantity used coming from the 2009 Survey of Costs and Returns multiplied by the current retail price of fertilizer by grade
3. Feeds	quantity used coming from the results of the Costs and Returns Survey multiplied by the current price of aqua feeds
4. Pesticides, other chemicals	movement of the retail prices of all pesticides (insecticides)
5. Land tax	constant cost item
6. Rental: Land	movement of fishpond lease agreement (FLA) rates
Machine, tools and equipment	movement of agricultural wage rates
7. Labor costs (hired, unpaid operator and family and exchange labor)	movement of agricultural wage rates
8. Fuel and oil	movement of CPI for fuel & oil
9. Transport costs of inputs	movement of CPI for transport
10. Irrigation fee	movement of farmgate prices
11. License/permit	movement of fishpond lease agreement (FLA) rates
12. Interest payment on crop loans	increase of 10 percent per annum
13. Electricity	movement of CPI for light

…(Continued)

ITEM	BASIS/PROCEDURE
14. Food expense	movement of CPI for food
15. Repairs	movement of CPI for minor repairs
16. Other expenses (containers, etc.)	movement of CPI for furnishings and equipment
17. Other laborer's share	movement of agricultural wage rates
18. Landlord share	movement of farmgate prices
19. Harvester's share	movement of gross value of production
20. Lease rental	movement of farmgate prices
21. Depreciation	increase 10 percent per annum
22. Interest on operating capital	based on the Bangko Sentral ng Pilipinas (BSP) annual average lending rates percentage of cash costs paid for stocking materials, fertilizer, pesticides and hired labor
23. Rental value of owned land	movement of farmgate prices

The measures of farm profitability are as follows:

$$Gross\ Returns = Total\ production\ x\ Farmgate\ price$$

$$Returns\ above\ cash\ cost = Gross\ returns - Cash\ cost$$

$$Returns\ above\ cash\ and\ non-cash\ cost = Gross\ returns - Cash\ cost - Non-cash\ cost$$

$$Total\ Cost = Cash\ cost + Non-cash\ cost + Imputed\ cost$$

$$Net\ Returns = Gross\ returns - Total\ cost$$

$$Net\ profit - Cost\ ratio = \frac{Net\ returns}{Total\ cost}$$

2.2.8.4 Other Reference Information

1. The BAS publishes the report on the Updated Production Costs and Returns for Selected Agricultural Commodities in two (2) parts: Part I is on Palay and Corn and Part 2 is on Other Commodities. The publication comes out bi-annually. However, statistical tables containing the updated costs and returns are available in between years of publication.
2. Data on the production costs and returns of palay and corn are also included in BAS annual publications namely: Selected Statistics on Agriculture and Commodity Fact Sheets.

2.2.9 Others

2.2.9.1 Concepts, Definitions and Classifications

Agricultural Credit/Loans - comprise all advances and/or loans given to borrowers to finance activities relating to the agriculture sector which covers crops, livestock and poultry, fisheries and forestry. The activities include production, processing, storage and distribution.

Farm - is a parcel or parcels of land that satisfies any of the following conditions:

a. aggregate area of at least 1,000 square meters devoted to crops;
b. regardless of crop area but with:
   - *at least ten (10) head of large animals like carabao, cattle, etc., or 20 head of small animals like goat, hog, sheep, etc., or 50 head of rabbit, or 100 birds such as chicken, duck, turkey, etc., regardless of age and kind;*
   - *a combination of large and small animals in (a) equivalent to 10 agricultural units, where one agricultural unit (for livestock and poultry) satisfies any of the following conditions: a head of large animals (carabao, cattle, etc.) regardless of age and kind; two head of small animals (hog, goat, sheep, etc.) regardless of age and kind; five head of rabbit; or ten birds regardless of age and kind.*

Farm Equipment

Hand Tractor- *refers to two-wheeled apparatus controlled through handlebars by walking operator.*

Harrow - *is cultivating equipment set with spikes, spring teeth or discs and used primarily for pulverizing and smoothing the soil.*

Plow - *is farming equipment used to cut, lift and turn over soil in preparing land for planting.*

Sprayer/Dusters - *a device such as atomizer used in applying insecticides/pesticides to crops.*

Farm Household - a household in which a member operates an agricultural land, either solely or jointly with other members, and the aggregate area operated by the operator-members of such household qualifies to be called a farm

Farm Household Income - is the aggregate income of the members of the farm household from all sources.

Farm Income - *refers to income derived from all farm activities. It is composed of on-farm and off-farm income.*

On-Farm Income - *income derived from agricultural activities which were managed/ operated by the household.*

Off-Farm Income - *income derived from working in another farm operated by another household.*

Non-Farm Income - *refers to income generated from non-agricultural sources which include wage and salary employment, self-employment, family business, and other non-agricultural activities engaged by all members of the household.*

Food Expenses - expenditures incurred by the households for food. These also cover expenses for food during holidays and special occasions. Food items include cereals and cereals based products, roots and tubers, vegetables and spices, fruits, meat and meat preparations, dairy and eggs, fish and marine products, coffee, chocolate and tea, alcoholic and non-alcoholic beverages, cigar and cigarettes and other foods.

Recurring Expenses - refer to the usual or recurring expenses by the household on a regular or monthly basis such as payment of bills for electricity, water, telephone, etc. and other non-bill payments.

Non-Recurring Expenses - refer to expenses incurred occasionally or expenses called for when the need arises. These include expenses for clothing, education, medical care, maintenance and repairs, furnishings and equipment, recreations, and other disbursements.

2.2.9.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Rural family income	National and sub-national levels	1985	Family Income and Expenditure Survey (FIES)	NSO
Farm household income	National	1987	Integrated Farm Household Survey	BAS
	sub-national level	2002		

…(Continued)

Statistics/ Indicators	Coverage	Availability*	Data Source	Responsible Agency
Farm household expenditures	National and sub-national levels	2002	Integrated Farm Household Survey	BAS
Agricultural production loans	National level	1980	Administrative Records	ACPC
Number of agricultural machineries (tractor, harvester, sheller, etc.)	National and sub-national levels	1991	Census of Agriculture	NSO
Government expenditures in agriculture	National level	1981	DBM Publication	DBM

**The year cited here refers to the start of available data series.*

2.2.9.3 Data Processing, Estimation and Revision Methodology

Data are obtained from the sources and do not undergo further processing at BAS.

The indicator for family income is the percentage distribution by income decile, which is directly collected from the statistical reference book. Data at the national level and by region are compiled and tabulated separately for urban and rural areas. However, urban-rural disaggregation is not anymore available starting 2003.

The amount of agricultural production loan/credit at current and at constant prices is collected annually. The annual growth rate and the percentage of agricultural production loan to total agricultural loans and total loans are computed. Agricultural production loans granted by type of institution and by commodity are likewise compiled and their percentage shares are computed.

Data on the number of farm equipment by type and the number of farms using the farm equipment were obtained from NSO. The percentage of farms using the particular type of farm equipment is computed.

IFHS returns were encoded and processed at the Central Office using the software Integrated Microcomputer Processing System (IMPS). Data were presented in terms of simple averages and percentage distribution.

Agricultural expenditures are directly sourced from DBM publication and no further processing is being done.

2.2.9.4 Other Reference Information

1. For the metadata or other information about income and credit/loans, researchers are encouraged to visit the websites of NSO and ACPC, respectively.
2. Other sources of information for agricultural credit/loans are the following: BAS' annual publication on the Agricultural Indicator System's module on Agricultural Credit and Selected Statistics on Agriculture; ACPC's Report on Lending to Agriculture and the Year-End Agricultural Credit Report.
3. Information on family income may be sourced from the NSO's publication on Family Income and Expenditure Survey.
4. The statistical tables containing data on agricultural machinery are presented in the report under the Agricultural Indicators System's module on Inputs.
5. Data on farm household income and expenditures are contained in BAS main report entitled Socio-Economic Characteristics of Farm Households of the Philippines, 2002-2003 and these data are also posted in the BAS CountrySTAT website. The IFHS is also backed up by Manual of Operations and Central Office Editing Guidelines. Documentation of the IFHS can also be found at the BAS - Electronic Archiving and Network Services (BEANS).
6. Data on the total and agricultural expenditures can be found in the Bureau's Selected Statistics on Agriculture.

CHAPTER 3

MAJOR DATA SOURCES IN THE AGRICULTURAL STATISTICAL SYSTEM

3.1 List of Major Agricultural Censuses, Surveys and Register

Censuses

2000 Censuses of Agriculture and Fisheries (CAF)
1. 2002 Census of Agriculture (CA)
2. 2002 Census of Fisheries (CF)

Surveys

1. Palay (Paddy Rice) and Corn (Maize) Production Survey (PCPS)
2. Palay and Corn Stocks Survey 1 (PCSS1)
3. Crops (Other than Palay and Corn) Production Survey (CrPS)
4. Livestock and Poultry Production Surveys (LPPS)
   - *Backyard Livestock and Poultry Survey (BLPS)*
   - *Commercial Livestock and Poultry Survey (CLPS)*
   - *Semi-Annual Survey of Dairy Enterprises (SSDE)*
   - *Survey of Abattoirs and Dressing Plants (SADP)*
   - *Avian Population Survey (APS)*
   - *Livestock Population Survey (LPS*)
5. Fisheries Production Surveys (FsPS)
   - *Quarterly Commercial Fisheries Survey (QCFS)*
   - *Quarterly Municipal Fisheries Survey (QMFS)*
   - *Quarterly Inland Municipal Fisheries Survey (QMIFS)*
   - *Quarterly Aquaculture Survey (QAqS)*
6. Food Consumption Survey (FCS)
7. Farm Prices Survey (FPS)
8. Integrated Agricultural Marketing Information System/Agricultural Marketing News Service (AGMARIS-AMNEWSS)
9. Agricultural Labor Survey (ALS)
10. Costs and Returns Survey (CRS)
11. Integrated Farm Household Survey (IFHS)

Administrative Register

Foreign Trade Statistics

3.2 Metadata for Each of the Major Censuses

3.2.1 2002 Census of Agriculture (CA)

3.2.1.1 Overview

The Census of Agriculture (CA) is a large-scale government operation undertaken every ten (10) years by the National Statistics Office (NSO). The activity is geared towards the collection and compilation of statistics on the agriculture sector of the country. The collected data constitute the bases from which policymakers and planners formulate plans for the country's development.

Historical Background

The collection of data for agriculture was first included in the Economic Census (EC) in 1903, 1918, 1939 and 1948. However, in 1960, and every ten (10) years thereafter, the Census of Agriculture (CA) was undertaken separately from the EC. From 1971 to 1991, the CA was undertaken together with the Census of Fisheries (CF), thus these two activities were collectively known as the Census of Agriculture and Fisheries. However, for 2002, the CA and the CF were undertaken separately (the CA in March 2003 and the CF in September 2003) since these two (2) censuses differ in scope/coverage and the needed expertise of enumerators and field supervisors. Therefore, the overall activity title was changed to "2002 Censuses of Agriculture and Fisheries" (CAF), but the individual census titles were retained. The 2002 CA is the fifth of the series of decennial censuses on agriculture in the country.

Objectives

The 2002 CA was envisioned with the following objectives:

1. to determine the structure and characteristics of agricultural holdings;
2. to determine the number and distribution of households and enterprises engaged in agriculture and to gather information on the operation of these households and enterprises;
3. to provide the basis for sampling frame for other statistical undertakings; and
4. to provide basic data for use in national as well as sub-national development planning.

Specifically, it aimed to:

1. obtain comprehensive data on farm characteristics such as size, location, tenure status, irrigation system, crops planted, livestock/poultry raised, etc.;
2. determine the type and number of equipment, machineries and facilities used in the operation of agricultural activities, whether owned or rented; and
3. provide benchmarks for the various statistical series which are designed to measure progress in agriculture.

Scope

The following data items were included in the 2002 CA:

1. Holding identification
2. Demographic characteristics of the operator/hired manager
3. Legal status of the holder
4. Characteristics of the holding
5. Crops
6. Livestock and poultry
7. Equipment, machineries, facilities and other farm tools
8. Selected agricultural activities
9. Demographic characteristics of household members

Coverage

All cities/municipalities in the country's 17 regional groupings and 80 provinces were treated as the domains of 2002 CA and the barangays of each city/municipality, as the sampling units. Barangay is the smallest political subdivision of the country.

All households from the sample barangays, whether they are in urban or in rural areas, were listed to determine whether any member was engaged in any agriculture or fishing activity anytime from January 1 to December 31, 2002. All agricultural operators in the sample barangays were included in the 2002 CA enumeration.

3.2.1.2 Census Design

Sampling Frame

The results of the 2000 Census of Population and Housing (CPH) and 1991 Census of Agriculture and Fisheries (CAF) served as the basis of sampling frame for the 2002 CA.

Sampling Design/Statistical Unit/Selection Procedure

The cities and municipalities were the domains of the census and the ultimate sampling units were the barangays.

Except for Laguna, Isabela, Bukidnon and Bataan which used complete enumeration, the 2002 CA adopted a systematic sampling of an ordered total farm area (TFA) from the 1991 CAF and total number of households based on 2000 Census of Population and Housing (CPH).

All barangays in a municipality except in the National Capital Region (NCR) were grouped into three strata, as follows:

Stratum 1 - all barangays with the largest TFA in each municipality in the 1991 CAF
Stratum 2 - all other barangays covered in the 1991 CAF, comprising 50 percent of the non-certainty barangays
Stratum 3 - all other barangays, comprising 50 percent of those not covered in the 1991 CAF

Barangays in each city/municipality for each province (excluding NCR) were ranked by descending values of TFA. Barangays that did not have TFA values (in stratum 3) because they were not sampled during the 1991 CAF were arranged in ascending order of total number of households based on the 2000 CPH. The barangay with the largest TFA was automatically part of the sample and this was referred to as the certainty barangay. In case of certainty barangay that was split, its daughter barangay automatically became a certainty barangay also. Then a 50 percent systematic sample was selected from Strata two (2) and three (3).

On the other hand, NCR was subdivided into six (6) districts, namely:

NCR I - Manila;
NCR II - Quezon City;
NCR III - San Juan, Cities of Mandaluyong, Marikina and Pasig;
NCR IV - Malabon, Navotas, Cities of Kalookan and Valenzuela;
NCR V - Pateros, Taguig and Makati City; and
NCR VI - Cities of Pasay, Las Piñas, Muntinlupa, Parañaque.

The sampling was done independently in each district. The above sampling procedure was followed, except that the sampling rates for strata two (2) and three (3) were 50 percent and 10 percent, respectively.

All agricultural establishments as identified in the 2002 List of Establishments (LE), regardless whether located in 2002 CA sample barangays or not, were enumerated. These included new-formed agricultural establishments during the time of census enumeration. However, agricultural establishments that had stopped operation or were no longe existing were excluded. About 1,613 agricultural establishments were enumerated.

Main Data Items and Variables for Operational Purposes

1. Size of farm parcel
2. Farm location
3. Tenure of farm
4. Land use
5. Presence of irrigation
6. Physical area of temporary crops planted by parcel by cropping
7. Effective area of temporary crops planted by parcel
8. Total number of trees/vines/hills and of productive age and physical area for scattered and compact planting of permanent crops
9. Inventory of livestock and poultry
10. Inventory of equipment, machinery, facilities and other farm tools

Reference Period: 2002 except for livestock and poultry inventory which was the time of visit

Date of Data Collection: March 2003

Geographical Scope: All provinces

3.2.1.3 Conduct, Operations, Data Quality Control

The National Statistics Office (NSO) was in-charge of the over-all conduct of the 2002 Censuses of Agriculture and Fisheries (2002 CAF). Specifically, PNSO was responsible for the planning and preparation, conduct of the census, data processing, analysis and publication of census reports, and data dissemination.

To ensure the success of the census activity, the office coordinated and established partnerships both with concerned government and non-government agencies for the inclusion of their data needs in the census, for logistics support and assistance, among others. The office also adhered on the concepts, data requirements for international comparability and recommendations of the Food and Agriculture Organization (FAO) on the conduct of the census.

One of NSO's main partner agencies during the conduct of 2002 CAF was the Department of Agriculture (DA) through the Bureau of Agricultural Statistics (BAS), the Department's primary agency for all official statistics on agriculture, fishery and other related fields. During the enumeration phase, the Provincial Agricultural Statistics Officer (PASO) served as the Assistant Provincial CAF Officer and the BAS field staff served as Census Area Supervisors (CAS) in areas where there was no available Statistical Coordination Officers (SCO). Likewise, selected staff from the Bureau of Fisheries and Aquatic Resources (BFAR) were tapped as trainers especially in the conduct of 2002 CF.

The NSO also teamed up with the Department of Interior and Local Government (DILG). The provincial governors and city/municipal mayors acted, respectively, as chairpersons of the Provincial and City/Municipal Census Coordinating Boards (P/C/MCCB), while the officials from the various local government units including the Civil Registrars were tapped as members. The census coordinating boards were tasked to assist the NSO in providing logistics for 2002 CAF.

Following were the areas of activities carried out in the conduct of the two censuses:

Preparatory Phase

- Coordination and conduct of public fora with data users
- Preparation and design of questionnaires and other census forms
- Preparation of instruction manuals for census data gatherers/supervisors and other manuals for field operations
- Conduct and preparation of pre-tests and pilot census reports
- Preparation of workload analysis, budget and other logistics requirements
- Recruitment and hiring of census data gatherers/supervisors

Training and Enumeration

- Conduct training of personnel involved in listing/enumeration
- Listing/enumeration of agricultural/fishing operators, including supervision
- Field editing of questionnaires and other census forms
- Evaluation of quick count of agricultural/fishing operators and selected characteristics

Data Processing

- Manual editing at Provincial Offices
- Data capture at Regional Offices

- Computer editing at the Central Office
- Tabulation and evaluation of Census results

Other Post Enumeration Activities

- Preparation of publication (Census Results)
- Conduct of national/regional data dissemination
- Computation and analysis of standard errors (SE)
- Preparation of data quality assessment reports

The planning and preparation of 2002 CAF started as early as the middle of 2000 by creating the Task Force on the 2002 Census of Agriculture and Fisheries (TF-CAF) through NSCB Memorandum Order 006 Series of 2000 with NSO and the Department of Agriculture (DA) as Chair and Vice-Chair, respectively. Members of TF-CAF included government offices with concerns on agriculture and fisheries, other statistical agencies and the academe. Their main functions were to recommend programs on methodology and strategies for more efficient census operation, and ascertain that relevant variables/data items were to be gathered, among others.

At the PNSO Central Office, a Census Steering Committee for 2002 Census of Agriculture and Fisheries (CSC-CAF) and the different Working Groups (WG-CAF) were likewise created to provide over-all directions for the activities of 2002 CAF and to lay out plans and strategies for the census, respectively. The CSC-CAF was chaired by the NSO Administrator with the Deputy Administrator as Vice-Chair and assisted by the different Department Directors.

The NSO field personnel were also consulted concerning field operation. Meanwhile, the Household Statistics Department (HSD) coordinated and monitored all matters pertaining to 2002 CAF while the Census Planning and Operations Division (CPOD) was the subject-matter division mainly responsible for the conduct of the census.

All authorities pertaining to the operational procedures of census implementation emanated from the PNSO Administrator. These authorities were delegated through a chain of command. On the other hand, the Director of the Household Statistics Department (HSD) spearheaded the 2002 CAF Project Staff (2002 CPS) which served as the monitoring hub and communications action center for the census.

In the field, the PNSO Regional Director was responsible for the monitoring, coordination and supervision of the activities of all provinces within the

region, reporting the status of census taking, and problems encountered, if any, to the NSO Administrator. The BAS Regional Agricultural Statistics Officer (RASO) assisted the RD in implementing the census in the region.

At the provincial level, overall supervision was lodged to the Provincial Statistics Officer (PSO), who was assisted by the BAS Provincial Agricultural Statistics Officer (PASO). The PSO reported to the RD the information and/or major decisions he/she made related to census taking in the province. The District Statistics Officer (DSO) served as the link between the PSO and the Census Area Supervisors in cities/municipalities within a particular district.

The overall supervisor in a given city/municipality is called Census Area Supervisor (CAS). This task was delegated to the NSO Statistical Coordination Officers (SCO), or to the BAS field staff in areas where there was insufficient number of CAS. The CAS directly supervised all the Team Supervisors (TS) within the city/municipality. The TS, on the other hand, was responsible in supervising a given number of enumerators in their assigned areas.

To sustain quality of data collected for the 2002 CAF, the following quality control measures were implemented:

Training:

- A training guide was efficiently designed to conform to a uniform and standard training program across the country.
- All training programs were conducted by levels wherein subject matter specialists were tapped as the main trainers on the first level of training. Selected participants who attended the first level training became trainers of the next levels.
- Selected staff of the Bureau of Agricultural Statistics (BAS)/Bureau of Fisheries and Aquatic Resources (BFAR) served as resource persons in all levels of training.

Supervision:

- Selected staff of NSO – Central Office and key Field Office staff monitored the enumeration throughout the country with the assistance of selected staff of the BAS/BFAR.
- Spot-checking of enumerators was done in order to determine if they adhered to the procedures laid out for CAF.
- Field editing of accomplished questionnaires for missing and questionable entries on accomplished questionnaires was

likewise done in order to correct the errors while enumeration was still on going in the sample barangays.
- Non-sampling errors were monitored and minimized using forms designed to compare data gathered by enumerators.
- Complete coverage of sample barangays was ensured through the use of maps with defined boundaries and/or landmarks.

Quick Count:
- CAF Form 9 (Worksheet for Agriculture) and CAF Form 10 (Worksheet for Fisheries) were designed and utilized to provide summary of selected farm characteristics and fishing/aquafarm operations, respectively. Farm characteristics monitored were the number of farms, physical farm area in hectares, number of livestock/poultry raised by agriculture operators, type of fishing operation (municipal or commercial) and/or aquafarm operation, and physical area/volume of the aquafarm operated. All ENs were tasked to accomplish daily CAF Forms 9 or 10 and submit these to field supervisors on a designated date and place.
- A Quick Count (QC) System was devised based on CAF Forms 9 or 10 to generate QC reports on the progress of enumeration and summary statistics of selected farm and fishing/aquafarm characteristics.
- Evaluation of QC reports was done by NSO Provincial Offices while enumeration was still on going. Further evaluation of the preliminary results was done by the central office staff. In evaluating the Quick Count reports, the NSO Provincial Offices used information of the land area for a city/municipality and the 1991 Census of Agriculture and Fisheries (CAF) results such as the maximum number of heads for livestock and poultry for a barangay. The total farm area of a city/municipality should not exceed the reported land area. On the other hand, the number of livestock/poultry was checked whether this can be accommodated with the farm area reported.

Data Processing
- The 2002 CAF processing of census questionnaires consisted of two primary procedures: manual processing at the provincial office and machine processing at the regional office and central office.
- Manual data processing involved the review of the entries for completeness and acceptability, checking the count of accomplished forms, verification of geographic identification

(GeoID) and coding some of the entries. The NSO Provincial Offices were responsible for manual processing of questionnaires.

- Machine data processing, which was done at the Regional Office, involved data capture and computer editing of entries for consistency of data items within and between records. Machine processing was also done in the C.O. However, this included imputation of missing entries and summarization of data according to predetermined table formats, further evaluation and final tabulation.

3.2.1.4 Statistical Report

2002 Census of Agriculture Final Report

Volume I- Residence of the Operators

- *Philippines*
- *By Region, with Provincial Breakdown*

Volume II- Location of Farms

- *Philippines*
- *By Region, with Provincial Breakdown*

3.2.2 2002 Census of Fisheries (CF)

3.2.2.1 Overview

The Census of Fisheries (CF) is a large-scale government operation undertaken every ten (10) years by the Philippine National Statistics Office (NSO). The activity is geared towards the collection and compilation of statistics on the fisheries sector of the country. The collected data constitute the bases from which policymakers and planners formulate plans for the country's development.

Historical Background

The collection of data for agriculture was first included in the Economic Census (EC) in 1903, 1918, 1939 and 1948. However, in 1960, and every 10 years thereafter, the Census of Agriculture (CA) was undertaken separately from the EC. From 1971 to 1991, the CA was undertaken together with the Census of Fisheries (CF), thus these two activities were collectively known as the Census of Agriculture and Fisheries. However, for 2002, the CA and the CF were undertaken separately (the CA in March 2003 and the CF in September 2003) since these two censuses differ in scope/coverage and in the needed expertise of enumerators and field

supervisors. Therefore, the overall activity title was changed to "2002 Censuses of Agriculture and Fisheries" (CAF), but the individual census titles were retained.

The 2002 CF was the fourth of the series of decennial censuses on fisheries in the country.

Objectives

The 2002 CF was envisioned with the following objectives:

1. to determine the structure and characteristics of fishing and aquafarm operators;
2. to determine the number and distribution of households and enterprises engaged in fishing and to gather information on the operation of these households and enterprises;
3. to provide the basis for sampling frame for other statistical undertakings; and
4. to provide basic data for use in development planning.

Specifically, it aimed to:

1. gather basic data on fishing operation such as type of fishing operation, fishing gears, fishing boats/vessels, type and size of aquafarm;
2. determine the type and number of equipment and machineries used in the operation of fishing activities;
3. measure the participation and involvement of household members in fishing operation; and
4. provide benchmarks for the various statistical series, which are designed to measure progress in fisheries.

Scope

The following items were included in the 2002 CF:

Municipal and Commercial Fishing

1. Fishing operation identification
2. Characteristics of the operator/hired manager
3. Category of fishing
4. Legal form of organization
5. Fishing gears/accessories/devices used
6. Fishing boats/vessels used
7. Demographic characteristics of household members

Aquaculture

1. Aquafarm operation identification

2. Characteristics of the operator/hired manager
3. Type of aquafarm
4. Characteristics of aquafarm
5. Equipment and facilities used
6. Demographic characteristics

Coverage

All cities/municipalities in the country's 17 regional groupings and 80 provinces were treated as the domains of 2002 CF and the barangays of each city/municipality, as the sampling units. Barangay is the smallest political subdivision of the country.

All fishing and aquaculture operators in the sample barangays who were listed during the April 2003 listing operation and during the 2002 CA in March 2003 whether they were in rural or urban areas, were covered in the September 2003 CF enumeration. The list of fishing and aquaculture operators during the period January 1 to December 31, 2002 served as the frame for this undertaking. Among the operators in the list, only those who were engaged in fishing/aquaculture activity anytime from September 1, 2002 to August 31, 2003 were enumerated.

3.2.2.2 Census Design

Sampling Frame

The results of the 2001 Municipal and Commercial Fishing Survey (MCFS), 1999 Barangay Screening Survey (BSS), 2000 Census of Population and Housing (CPH) and 1991 Census of Agriculture and Fisheries (CAF) served as the source of sampling frame for the 2002 CF.

Sampling Design/Statistical Unit/Selection Procedure

The cities and municipalities were the domains of the census and the barangays were the ultimate sampling units.

A barangay was considered as fishing barangay if at least one household resident was engaged in any fishing activity during the reference period. Using this concept and given some prior information on the characteristics of the households in all barangays, the barangays were stratified into five. The strata were formed to facilitate selection of sample fishing households and minimize chance of missing out operators in non-

sampled barangays. The five (5) strata were characterized as follows:

Stratum 1 - all fishing barangays identified from 2001 Municipal and Commercial Fishing Survey (MICFS) for 26 priority provinces

Stratum 2 - all barangays not classified in Stratum 1 that were identified as fishing barangays from both the 1999 Barangay Screening Survey (BSS) and 2000 Census of Population and Housing (CPH)

Stratum 3 - all barangays not classified in Strata 1 and 2 that were identified as fishing barangays from 1999 BSS

Stratum 4 - all barangays not classified in Strata 1, 2 and 3 that were identified as fishing barangays from 2000 CPH

Stratum 5 - all the remaining barangays (non-fishing barangays)

Strata 1 and 2 were certainty strata. This was so since there was a very high chance that there is at least one fishing operator in barangays that fall under Stratum 1 and Stratum 2. For Strata 3 and 4, a 50 percent systematic sample of barangays from the list sorted according to the number of fishing household operators was selected. The likelihood that there were still fishing operators in these barangays declined significantly, hence the 50 percent sampling. For Stratum 5, on the other hand, a five (5) percent systematic sample of barangays sorted according to the number of households from 2000 CPH was selected. There was a very slim chance that fishing operators can be found in barangays under Stratum 5 and yet, five (5) percent sample was still drawn to ensure completeness of census count.

In addition to the barangays resulting from sampling in the five (5) strata above, the provinces of Leyte and Batanes were completely enumerated.

Fish production can also be done by stakeholders outside the households. Thus, fishing establishments were also included in the census. The 1,150 fishing establishments identified in the 2002 List of Establishments (LE) were enumerated as well. This group was considered as Stratum 6 of the CF.

Given the above design, a total of 11,357 barangays accounting for 27.08 percent of the 41,945 barangays throughout the country was obtained. The sample barangays were expected to yield 1,032,839 fishing households in the list. Since Leyte and Batanes were completely

enumerated, this increased the sample barangays to 12,998 or 30.99 percent of the total barangays and about 1,355,337 fishing households throughout the country.

Main Data Items and Variables for Operational Purposes

1. Inventory of fishing gears/accessories/devices
2. Inventory of fishing boats/vessels
3. Gross tonnage of fishing boats/vessels
4. Period of operation of fishing boats/vessels

Reference Period: September 1, 2002 to August 31, 2003

Date of Data Collection: September 2003

Geographical Scope: All provinces

3.2.2.3 Conduct, Operations, Data Quality Control

Please refer to the discussion in Section 3.2.1.3 of this report.

3.2.2.4 Statistical Report

2002 Census of Fisheries Final Report, Philippines

3.3 Metadata for each of the Major Surveys

3.3.1 Palay and Corn Production Survey (PCPS)

3.3.1.1 Overview

Historical Background

Over the years, the BAS has developed and implemented a statistical system for palay and corn, which dates back to as early as 1954 when it was still a division (Agricultural Economics Division) of the Department of Agriculture and Natural Resources (DANR). The system presently includes the quarterly Rice and Corn Production Survey (RCPS), now known as Palay and Corn Production Survey (PCPS).

The PCPS has for its predecessor the Crops and Livestock Survey (CLS, 1954-1968); the Integrated Agricultural Survey (IAS, 1968-1985); and the Rice and Corn Survey (RCS, 1985-1993). Prior to 1986, the RCS employed a two-

stage stratified sampling design with municipality as the domain. However, in 1986, the RCS adopted a three-stage sampling design with province as the domain. The RCPS design evolved from a statistical research undertaken in 1989 jointly by the Philippine Statistics Association (PSA) and BAS under a grant from the USAID. It was conceived as an improvement to the RCS with a completely different sampling frame and design.

In July 1994, BAS officially adopted the new RCPS design which uses the results of the 1991 Census of Agriculture and Fisheries (CAF) as basis for sampling frame. Beginning 2003, due to budgetary constraints, the Bureau has instituted reductions in sample size and provincial coverage. In July 2004, the survey using RCPS questionnaires was limited to 24 major palay and 18 major corn producing provinces. For the rest of the provinces not covered by the survey, the Bureau has designed a monitoring system intended to collect information on last quarter's production, standing crop and planting intentions of farmers.

The improved Rice and Corn Production Survey (RCPS) is now known as Palay and Corn Production Survey (PCPS). This was implemented in December 2007 (January 2008 Round) covering all provinces excluding Batanes but including the Cities of Zamboanga and Davao. The new features of this survey are the following: updated sampling frame for the secondary units; more detailed sample status categories; production, area and yield by seed type; inclusion of items on application of fertilizer and yield protecting inputs; additional items on disposition and utilization, and Rice and Corn Program components/benefits/services.

True to the Bureau's commitment of making available to the public the reliable statistics in agriculture, particularly palay and corn, continuous efforts in developing approaches and methodologies in estimating such statistics had been and being done, particularly the survey questionnaires. The Technical Working Group on Cereals Statistics of the Bureau reviewed the current PCPS questionnaires and came up with sets of user-friendly survey instruments. The major features of the new sets of questionnaire are: shift from barangay level to farm level questionnaire i.e., from a maximum of five (5) households to one (1) household per questionnaire; change in questionnaire format; more detailed sample status categories; defined types of ecosystem; inclusion of items on labor inputs; and application of botanical extracts in addition to chemical pesticides. These new sets of questionnaires were used starting the April 2012 survey round of the PCPS.

Scope

The PCPS covers sample farming households in sample barangays in all provinces except Batanes but including Zamboanga and Davao Cities. This is conducted quarterly with the quarters as the reference periods, as follows:

April Round Survey	-	*January to March*
July Round Survey	-	*April to June*
October Round Survey	-	*July to September*
January Round Survey	-	*October to December*

Objective

The objective of the survey is to generate estimates and forecasts on palay/corn area, production and yield.

Purpose

The purpose of this survey is to provide data inputs for policy and programs on rice and corn.

Contents

The survey covers the following information:

1. Area planted/harvested and production by ecosystem, crop type and by seed class.
   Data collected are specific for each quarter. Data on area and production are broken down further by ecosystem (irrigated, rainfed and upland for palay), by crop type (white and yellow for corn) and by seed class (hybrid, inbred-certified, good seeds/farmers' seeds, and native/traditional seeds for palay; and hybrid, modern-OPV, and native- OPV for corn).
2. Monthly distribution of production and area harvested
   This refers to the relative monthly disaggregation of area harvested and production.
3. Farm household disposition/utilization of production
   Relative distribution of production utilization according to the manner of disposition as follows: sold, for household consumption, given as share of landowner, given/paid to harvester, thresher and other farm laborers, set aside for seeds, payment of loan, irrigation fee, feeds and post-harvest wastage/losses. Production disposition/utilization of white and yellow corn are done separately.

4. Area with standing crop
   Measurement of area with standing crop as of last day of the completed quarter forms basis of forecast of production for the current quarter.
5. Planting intentions indicator
   Farmers' intentions to plant within the current quarter and the corresponding area to be planted for cultivation are determined to form basis of production forecast for the succeeding quarter.
6. Use of seeds, fertilizers, and pesticides
   Amount of seed used for planting and amount of fertilizer and pesticides (inorganic and organic) applied during a specific survey period
7. Awareness and availment of Department of Agriculture (DA) Rice and Corn Programs intervention
   Farmers' awareness and availment of benefits from DA Rice and Corn Programs

3.3.1.2 Survey Design

Survey: Palay and Corn Production Survey (PCPS)

Sampling Frame

The 1991 Census of Agriculture and Fisheries provided the basis for the sampling frame for the PCPS. With the exception of Laguna, Isabela and Bukidnon where the traditional complete-enumeration strategy was employed, the 1991 CAF used sampling techniques for selecting the primary sampling units – the barangays.

The largest barangay in a municipality was taken with certainty while a one in two sampling rate was used for selecting the remaining barangays in the municipality. This scheme effectively resulted in the generation of two sub universes: a sub universe of barangays with probability of selection equal to one (1) and another sub universe of barangays with probability of selection equal to 0.5.

The list of barangays with the corresponding total palay farm area devoted to palay/corn served as the sampling frame for the selection of sample barangays. The list of farming households in the selected barangays served as sampling frame for the selection of sample households.

In November 2007, an updating of farming households in all palay/corn sample barangays nationwide was done to address the problem of non-response among the sample households due to transfer of households, stoppage of farm operation, passing away of operator etc. Another round of frame updating activity was made in the 3rd quarter of 2011 to address the same concern.

Sampling Design/Statistical Unit/Selection Procedure

A replicated two-stage stratified sampling design was used with barangay as the primary sampling unit (psu) and farming household as the secondary sampling unit (ssu). The barangays were stratified based on their palay/corn area and were selected using probability proportional to size (pps) scheme. Four (4) replicates i.e., four independent sets of sample barangays per stratum were drawn. From the selected barangays, households were drawn through systematic sampling.

Main Data Items and Variables for Operational Purposes

1. Area planted/harvested
2. Production by ecosystem/crop type and seed type
3. Monthly distribution of production and area harvested
4. Farm household disposition/utilization of production
5. Area with standing crop
6. Planting intentions indicator

Reference Period: January to March, April to June, July to September, October to December

Date of Data Collection: first 10 days of the quarter

Geographical Scope: The survey covers all provinces except Batanes but including Zamboanga and Davao Cities.

3.3.1.3 Conduct, Operations, Data Quality Control

The BAS has created a Technical Working Group (TWG) on Cereals Statistics to address statistics-related issues and concerns of this commodity group.

During survey operations, the Statistical Operations Coordination Division (SOCD) serves as the link between the Central Office (CO) and the Operations Centers. Consequently, the following flow of communication is observed:

- All communications coming from the BAS Central Office and going to the field operations centers emanate from the Office of the Director through the SOCD.
- All communications coming from the field operations centers are addressed to the Office of the Director through the SOCD, Attention: Crops Statistics Division.

The Regional Agricultural Statistics Officer (RASO) is responsible for the monitoring and supervision of the survey of all provinces within the region with the Provincial Agricultural Statistics Officer (PASO) as the overall supervisor in the province.

The contractual data collectors (CDCs) carry out the data collection. Prior to survey operations, training of the CDCs is conducted to ensure that the procedures and concepts are correctly understood. Mock interviews and dry-run exercises are made part of the training. Meanwhile, the supervisors, composed of regular field staff, undertake close supervision of the CDCs during data collection. Part of a supervisor's job is the conduct of spot-checking and/or back-checking activities.

As part of the quality control measures implemented at various stages of the survey, rounds of reviews are made before the survey instruments are reproduced for field operations.

Before the results are summarized, field data editing, which includes item-by-item checks on the consistency, completeness and acceptability of the data, is done during and after data collection. Another layer of consistency and completeness check is made during electronic data processing. Once output table is generated, series of reviews on the results follows before the data are submitted to concerned units.

Completion is reached when the estimates generated are affirmed at the end of the National Data Review and made part of the Report on the Performance of Philippine Agriculture.

3.3.1.4 Statistical Report

- Rice and Corn Situation and Outlook
- Quarterly Seasonally Adjusted Rice Production and Prices

3.3.2 Palay and Corn Stocks Survey (PCSS1)

3.3.2.1 Overview

Historical Background

Information on total supply condition is vital to be able to maintain food balance. Frequent occurrences of typhoons and other calamities, which affect domestic production, call for the need to monitor stocks situation of the staple grains to ensure supply and demand equilibrium, access, and price stability. Information on stocks holdings can guide policy makers how much and whether to export or import rice or corn in the immediate future.

The BAS (then BAEcon) in coordination with the National Food Authority (NFA) has come up with the survey in monitoring the levels of rice and corn stocks in the country (household stocks for BAS; commercial warehouses and NFA depositories stocks for NFA).

PCSS1 has been a continuing activity of the BAS since 1980.

Scope

The reference period is the first day of each month. The survey covers all provinces except Batanes but including Zamboanga and Davao Cities.

Objective

The survey aims to generate estimates of the current stock of rice, palay, corn and corn grits in farm and non-farm households.

Purpose

The purpose of the survey is to provide inputs to policy makers on whether to export or import rice or corn and how much in the immediate future.

Contents

The survey collects data on the stock level of palay, rice, corngrain and corngrits in the households.

3.3.2.2 Survey Design

Survey: Palay and Corn Stocks Survey (PCSS1)

Sampling Frame

The PCSS1 is anchored on the sampling frame of the PCPS which is briefly discussed below.

The 1991 Census of Agriculture and Fisheries provides the basis for the sampling frame for the PCPS. With the exception of Laguna, Isabela and Bukidnon where the traditional complete-enumeration strategy was employed, the 1991 CAF used sampling techniques for selecting the primary sampling units – the barangays.

The largest barangay in a municipality was taken with certainty while a one in two sampling rate was used for selecting the remaining barangays in the municipality. This scheme effectively resulted in the generation of two sub universes: a sub-universe of barangays with probability of selection equal to one (1) and another sub-universe of barangays with probability of selection equal to 0.5.

The list of barangays with the corresponding total palay farm area devoted to palay/corn served as the sampling frame for the selection of sample barangays. The list of farming households in the selected barangays served as sampling frame for the selection of sample households.

In November 2007, an updating of farming households in all palay/corn sample barangays nationwide was done to address the problem of non-response of sample households due to reasons like transfer of households, stoppage of farm operation, passing away of operator etc.

Sampling Design/Statistical Unit/Selection Procedure

For pure palay and pure corn provinces (those provinces whose produce are either palay only or corn only), one replicate consisting of ten (10) sample barangays is covered.

For overlap palay and corn provinces (those provinces producing both palay and corn), five (5) barangays were drawn randomly from one replicate of the palay samples and five (5) barangays from one replicate of the corn samples. For other provinces (neither corn nor palay is the major produce), only five (5) sample barangays were drawn.

In the selection of sample households (SSU), the PCSS incorporated non-farming households, in addition to farming households of the PCPS.

Selection of the five (5) non-farming households was done thru the right coverage approach with a defined starting point and random start.

Main Data Items and Variables for Operational Purposes

Stock levels of palay, rice, corngrain and corngrits in the household

Reference Period: 1st day of the reference month

Date of Data Collection: First Four (4) days of the reference month

Geographical Scope: The survey covers all provinces except Batanes but including Zamboanga and Davao Cities.

3.3.2.3 Conduct, Operations, Data Quality Control

The PCSS1 is one of the activities conducted by the Bureau of Agricultural Statistics whose logistics form part of the agency's budget. To ensure the generation of reliable, accurate and acceptable stocks level held by households[1], a Task Force on Palay and Corn Stocks Assessment was formed. The Task Force shall review and evaluate existing methods for assessment of periodic cereals stocks. The results of this assessment shall serve as basis in developing an improved design, instruments and operational modality of the stocks survey. To date, the Technical Working Group (TWG) on Cereals Statistics has assumed this responsibility.

All authorities pertaining to the operational procedures of the survey emanate from the Director. These authorities are then delegated to the field supervisors through the Chief of the Bureau's Statistical Operations Coordination Division (SOCD), the Regional Agricultural Statistics Officers (RASOs) and finally, the Provincial Agricultural Statistics Officers (PASOs).

During survey operations, the SOCD serves as the monitoring hub and communication action center of the Bureau. Consequently, the following flow of communication is observed:

- All communications coming from the BAS Central Office and going to the field operations centers emanate from the Office of the Director through the SOCD.
- All communications coming from the field operations centers are addressed to the Office of the Director through the SOCD, Attention: Crops Statistics Division.

[1] *At present, the BAS is responsible for the generation of rice and corn stocks held in the household while the National Food Authority (NFA) is the source of stocks held in commercial warehouses and in NFA depositories. The BAS reports the total stock.*

In the field, the Regional Agricultural Statistics Officer (RASO) is responsible for the monitoring and supervision of the survey of all provinces within the region. At the provincial level, the overall supervisor is the Provincial Agricultural Statistics Officer (PASO). The Assistant PASO, aside from his/her assignment as assistant supervisor in the province, may be given a specific area of supervision, upon the discretion of the PASO. On the other hand, the POC staff are tapped to gather the needed information for the survey.

In order to minimize non-sampling errors, quality control measures are instituted at various phases of the activity. Rounds of reviews are made before the survey instruments are reproduced for field operations. During field operations, much attention is given to the conduct of training to ensure that the procedures and concepts are correctly understood. Mock interviews and dry-run exercises are made part of the training.

Close supervision is a must during data collection. Part of the PASOs' job as field supervisor is the conduct of back-checking activity. The procedure involves re-contacting respondents to check some details regarding the interview and the interviewer. The objective is to find out if data collection was indeed conducted and if so, determine the extent of the difference between the respondent's answers during the data collection proper and the back-checking activity.

Item-by-item checks on the consistency, completeness and acceptability of the data are done during and after data collection, before the results are summarized. Once table generation is done, series of reviews on the results follow before the data are finally presented and disseminated.

3.3.2.4 Statistical Report

- Monthly Rice and Corn Stocks Inventory

3.3.3 Crops Production Survey (CrPS)

3.3.3.1 Overview

Historical Background

Until 1980, data collection for other crops was done simultaneously with the regular Rice and Corn Survey. The sample respondents of the Rice and Corn Survey were also asked on information about other crops, which they have also grown. The estimation followed that for palay and corn.

During the period 1980–1985, the then Bureau of Agricultural Economics (BAEcon) field staff and Agricultural Technicians (ATs) detailed with the BAEcon under the Regional Agricultural Data Delivery System – Ministry of Agriculture Integrated Management Information System (RADDS-MAIMIS) project were responsible for data collection. At that time, estimation of area and production was based on indicators such as average size of farms and number of growers. Reporting forms were not standardized. Provincial estimates for area and production for all crops were submitted on semi-annual basis for consolidation at Central Office.

In 1987 under Executive Order No. 116 when BAS assumed the mandate as the principal agency responsible for Agricultural Statistics, some improvements have been introduced. A separate data collection system for other crops was established. In this system, Provincial Operations Centers (POCs) submitted estimates of the percent changes in area, production and total number of trees based on field observations and interview of key informants. Production estimates of about 20 major crops and nine (9) additional priority crops were generated quarterly. Data on production of the rest of the crops including area and number of bearing trees were generated on a semi-annual basis.

In 1987, only three POCs of the provinces contributing 80 percent of the total production of the major crops during the last three (3) years were required to submit the Quarterly Report on Production. This system of reporting went on until late 1990s when all POCs were required to submit the Quarterly Report on Production regardless of the contribution to the national total. This was an improvement since even the minor provinces could make significant differences in the estimates.

The Bureau has been also considering the production data of specialized commodity agencies like Sugar Regulatory Administration (SRA) on canes milled for centrifugal sugar, National Tobacco Administration (NTA) for tobacco, Fiber Development Authority (FIDA) for all fiber crops and Cotton Development Administration (CODA) for cotton production.

In 1996, a joint activity entitled Improvement of Data Collection Methodology for Production-Related Statistics for Coconut was conducted with the Philippine Coconut Authority (PCA). The Bureau was responsible for the survey methodology and data processing while the PCA was responsible for the data collection. The domain of the survey was municipality. Municipalities were classified as coastal flat, coastal upland, inland flat, and inland upland. It employed three-stage sampling.

The barangays were also classified according to the classification used for the municipalities and served as the first stage. The second stage was the two (2) coconut farmers from each sample barangay drawn using simple random sampling. The third stage was the ten (10) sample coconut trees lying along the longest diagonal line bisecting the parcel.

The survey was piloted in Davao Region provinces that started on the fourth quarter of 1996. This was replicated in the Western Visayas provinces in the first quarter of the following year. The provinces in the rest of the regions started to conduct this survey in June 1997. The PASOs and the Provincial Coconut Development Managers jointly validated the results. The PASOs forwarded the results to the region for further joint review by the RASOs and the Regional Managers.

Scope

The survey is being conducted nationwide although the commodity coverage varies by province and by region based on availability in terms of planting and seasonality. Below is the list of commodities covered:

FRUITS	Banana (bungulan, cavendish, lacatan, latundan, saba, other varieties), Calamansi, Mango (carabao, piko, other varieties), Pineapple, Durian, Lanzones, Mandarin, Mangosteen, Orange, Papaya, Rambutan, Watermelon, Starfruit, Tamarind, Avocado, Guava, Soursop, Jackfruit (ripe), Melon, Pummelo, Santol, Starapple, Breadfruit, Sapota, Java Plum, Sugarapple, Lime, Mabolo, Marang, Jamaica Plum, Camachile, Canistel, Grapes, Lemon, Macopa, Passion fruit, Strawberry, Custard Apple, Lamio, Salamander tree, Kalumpit, Pomegranate, Great Hog Plum, Gooseberry, Lipote, Longans, Persimon, Rattan fruits, Zapote, Dragon Fruit
VEGETABLES and ROOTCROPS	Cabbage, Cassava, Eggplant, Garlic, Mungbean, Onion bulb (bermuda, native multiplier), Peanut, Sweet potato, Tomato, Asparagus, Banana blossom, Bitter gourd, Bottle gourd, Broccoli, Carrots, Cauliflower, Chayote, Dasheen (cocoyam, tannia yautia), Ginger, Greater yam, Irish potato, Lady finger, Lettuce, Morning glory, Pechay (chinese cabbage, native pechay) Pepper (finger), Pepper (sweet), Snap beans, Squash fruits Black pepper, Cucumber, Dishrag gourd (angled loofah), Leeks (spring onion), Radish, String beans, Sweet peas, Sweet potato tops, Turnips

…(Continued)

VEGETABLES and ROOTCROPS	Arrowroot, Bamboo shoot, Celery, Chili pepper (fruit), Dasheen leaves/stem, Horseradish, Horseradish leaves, Jackfruit young, Malabar spinach, Pao (galiang), Papaya Green, Tugue Alucon/Bungon, Annato, Bago leaves, Bawing sulasi, Beets, Bilimbi, Bitter gourd leaves, Blackbeans, Cassava tops, Chayote tops, Chick pea, Citronella, Coconut sap/pith, Cowpea (cowpea green, cowpea dried),Cowpea tops, Dulaw/Kalawag, Fern (edible), Garden Pea, Jews Mallows, Katuray, Kentucky beans (Kidney beans red, kidney beans white), Kidney beans, Kinchay, Kulibangbang, Laurel, Likway, Lima beans, Lumbia, Lupo, Mushroom, Mustard, Pandan, Papait, Parsley, Pepper chili leaves, Pigeon pea, Red beans, Sabidokong, Samsamping, Sangig, Seeded breadfruit, Soybeans, Spinach, Squash tops/flowers, Sugod-sugod, Talinum, Tamarind flower, Watercress, Wax gourd, Winged beans, Wonder beans, Yambeans
NON-FOOD and INDUSTRIAL CROPS	Abaca, Coconut (mature, young), Coffee (arabica, excelsa, liberica, robusta), Rubber (cuplump) , Sugarcane (centrifugal sugar, panocha/muscovado, chewing and basi/vinegar), Tobacco (native, virginia, other varieties), Cacao, Cashew, Cotton, Oil palm (fresh fruit bunch), Kaong, Bromeliad, Euphorbia, Green cornstalk, Rice hay, Coconut Pili nut, Coir, Jute, Kapok, Maguey, Ramie, Salago, Chrysanthemum, Gladiola, Orchids (dendrobium, vanda), Roses, Coconut leaves, Cogon Romblon, Tiger grass, Laza/tambo, Banana leaves, Nipa sap/wine Anthurium, Aster, Azucena, Baby's breath, Carnation, Daisy, Gerbera, Heliconia, Ilang-ilang, Sampaguita, Statice, Guinea grass, Napier grass, Castor beans, Sesame, Sorghum, Pineapple fiber, Spraymum, African palm leaves, Indian mulberry, Banaba, Bettle nut, Ikmo/Boyo, Dahlia, Dawa, Flemingia, Ginseng, Ipil-ipil leaves, Lagundi, Oregano, Palm ornamentals, Peter bettle, Rensoni, San Francisco, Santan, Tikog, Water lily, Yellow bell, Yerba Buena, Puto-puto

Objective

The activity aims to generate basic production statistics for crops other than cereals at the national and sub-national levels.

Purposes

The survey addresses the following purposes:

1. to support the data needs of planners, policy and decision makers and other stakeholders in the agricultural sector; and
2. to provide periodic updates on crop related developments.

Contents

The survey contains the following data items as presented in its survey instrument:

1. identification particulars
2. production (kg)
3. area (ha)
4. number of bearing trees
5. justifications/reasons for changes

3.3.3.2 Survey Design

Survey: Crops Production Survey (CrPS)

Sampling Design/Statistical Unit/Selection Procedure

The survey employs a two-stage sampling design with municipality as the primary sampling unit and farmer-producer as the secondary sampling unit.

For small farms of crops covered under Farm Price Survey including the non-Farm Price Survey crops but identified as priority crops of the province/region, the top five (5) producing municipalities based on the volume of production are chosen. In each municipality, five (5) sample farmer-producers are enumerated.

For small farms of all other crops not covered under Farm Price Survey, top two (2) to three (3) producing municipalities are chosen. In each municipality, three (3) sample farmer-producers are enumerated.

For plantation farms, a maximum of five (5) plantations are covered based on the suggested cut-off area.

Main Data Items and Variables for Operational Purposes

1. Volume of production
2. Area harvested/planted
3. Number of bearing trees/hills/vines

Reference Period: Quarter

Date of Data Collection: Last week of the 2nd month of the reference quarter

Geographical Scope: The survey covers all provinces except Batanes but including Zamboanga and Davao Cities.

3.3.3.3 Conduct, Operations, Data Quality Control

Crops Production Survey is a regular survey undertaken by the Bureau of Agricultural Statistics (BAS) that sources its funds from the Bureau's national government's budget.

As one of the regular surveys conducted nationwide, each stage in the conduct of the survey is being attended by concerned divisions. The Statistical Methods and Research Division (SMRD) in coordination with the Crops Statistics Division (CSD), takes the lead in the review of the survey design being implemented. The division prepares the quality control in the data collection for implementation.

To review and address the crops related issues and concerns, a TWG on Crops Statistics has been created for the purpose. Members of the TWG are the technical staff from the Crops Statistics Division (CSD), Agricultural Accounts and Statistical Indicators Division (AASID), Statistical Methods and Research Division (SMRD), Information and Communications Technology Division (ICTD) and Statistical Operations Coordination Division (SOCD). The TWG conducts in depth study on the issues and concerns based on its findings and makes recommendations to the management. Any revision on the methodology including any phase in the data generation is discussed and assessed by the TWG.

Whenever revisions are to be implemented, all authorities pertaining to the operational procedures of the different surveys of the Bureau including the Crops Production Survey, emanate from the Bureau's Central Office.

These are then delegated to the field supervisors through the Chief of the Bureau's Statistical Operations Coordination Division (SOCD), the Regional Agricultural Statistics Officers (RASOs) and finally, the Provincial Agricultural Statistics Officers (PASOs). During survey operations, the SOCD serves as the monitoring hub and communication action center of the Bureau. Consequently, the following flow of communication is observed:

- All communications coming from the BAS Central Office and going to the field operations centers emanate from the Office of the Director through the SOCD.
- All communications coming from the field operations centers are addressed to the Office of the Director through the SOCD, Attention: Crops Statistics Division.

In the field, the RASO is responsible for the monitoring and supervision of the activities of all provinces within the region. He/she reports the progress of the survey to the Director and Assistant Director through the SOCD chief.

The overall supervisor in the province is the PASO. The Assistant PASO, aside from his/her assignment as assistant supervisor in the province, may be given a specific area of supervision, upon the discretion of the PASO. Like the Assistant PASO, the Officer-In-Charge PASOs have also specific area of supervision especially in POCs.

Data collection, processing, data analysis and dissemination are undertaken by the regular field staff. Whenever there are revisions in the data generation, any of the two strategies have been employed. One strategy is to conduct orientation to Central Office technical staff who would be deployed to the regions and provinces to act as trainors. The other strategy is to convene the RASOs, PASOs and the crops point persons for the orientation. They shall serve as trainors in their respective areas.

The non-sampling errors and quality control measures are instituted at various phases of the activity in terms of the forms used and procedures. The bases come from the field observations of the Central Office staff, feedback from the field supervisors and field staff on their implementation and based their submitted reports. The Statistical Methods and Research Division (SMRD) and the Statistical Operations and Coordination Division (SOCD) in coordination with the Crops Statistics Division (CSD) develop the quality control measures.

The RASOs and PASOs conduct personal supervision and back-checking. While doing so, they also conduct their own observations to strengthen and enhance the regional and provincial estimates. The field supervisor goes out with the data collector in his/her area of assignment to assist and to observe the first two to three interviews to be conducted. While back checking calls for the PASOs/OIC-PASOs to visit the collection areas which has not been supervised by the field staff during the data collection.

In most cases, back-checking involves asking some sample respondents on the information asked during the data collection proper, getting the patterns and trends on the levels of data of a commodity and interviewing the Barangay Chairman or its officers if the field staff has indeed visited the area during the period.

For commodities handled by specialized agencies, the BAS uses these agencies' data as data checks. In the case of sugarcane, the BAS gets the canes milled data from the Sugar Regulatory Administration (SRA). Almost all the canes produced nationwide come from plantations that are milled at the milling stations.

The results undergo series of reviews. The first is undertaken at the Provincial Operations Centers (POCs). The POC staff discuss and deliberate on the generated estimates using area and production parameters, and compilation of developments during the period as references. Second, after the provincial data review, the process is elevated to the regional level. And third, the final estimates of crops for the provinces are affirmed at the national data review at the Central Office. In these processes, the data on production of the previous quarter are finalized while the preliminary data for the current quarter are generated.

3.3.3.4 Statistical Report

- Crops Statistics of the Philippines (National and Regional)
- Major Crops Statistics of the Philippines (Regional and Provincial)
- Quarterly Bulletin (Major Fruit Crops, Major Vegetables and Root Crops, Major Non-Food and Industrial Crops)

3.3.4 Livestock and Poultry Production Surveys

- Backyard Livestock and Poultry Survey (BLPS)
- Commercial Livestock and Poultry Survey (CLPS)
- Semi-Annual Survey of Dairy Enterprises (SSDE)
- Survey of Slaughterhouses and Poultry Dressing Plants (SSHPDP)
- Avian Population Survey (APS)
- Livestock Population Survey (LPS)

3.3.4.1 Overview

Historical Background

The livestock data system can be traced as far back as 1954 when the annual crop and livestock survey was first instituted to capture primarily data on rice and corn production, and secondly, livestock population.

The Agricultural Economics Division of the Department of Agriculture (DA-AED) then spearheaded the survey. The DA-AED was restructured into the Bureau of Agricultural Economics (BAEcon) when R.A. 3627 was signed into law in 1963. About 10 years later, the livestock data were generated by the Integrated Agricultural Survey (IAS), which was first conducted in 1973 under the BAEcon. In that survey, livestock data on population of animals were included primarily to get indications of feed consumption in the (backyard) households.

In January 1974, however, the Bureau of Animal Industry (BAI) took the initiative to jointly undertake the IAS with BAECON introducing major improvements in the livestock data capture. It was a milestone in so far as livestock data system was concerned, because data capture in commercial farms was introduced for the first time, covering about 420 ranches for cattle, 910 hog and poultry farms. This survey covering commercial farms was conducted independently of the IAS which still covered the backyard sector. The said system of data collection of livestock data was sustained until 1982 when an attempt to generate small area statistics (by municipality) was undertaken under the "Regional Agricultural Data Delivery System - Ministry of Agriculture Integrated Management Information System" or "RADDS-MAIMIS". This project covered around 12,000 sample barangays with municipality as the domain. It was suspended in 1986, due to budgetary constraints. Henceforth, statistical re-designing was instituted consisting of reducing the number of samples and reverting to "province" as the domain.

The structural reform of the Philippine bureaucracy in the late eighties was seen as an opportunity by the Philippine Statistical System (PSS) to reshape itself and be responsive to the needs of the times. It was during this time when the Agricultural Statistical System (AgSTAT), in particular, did its best to respond to the demand for efficiency and quality information on the sector. The BAEcon, which was then the lone agency under the Department of Agriculture producing primary agricultural data along with other functions, was restructured to become the major producer of agricultural statistics. Thus, by virtue of Executive Order No. 116 which was signed by then Pres. Corazon C. Aquino in January 1987, BAEcon was renamed as the Bureau of Agricultural Statistics (BAS). Its mandate called for the collection, compilation and official release of agricultural statistics.

Improvement Measures Undertaken

In 1991, the United States Agency for International Development (USAID) provided a grant for the improvement of agricultural statistics under the

"Statistical Development and Analysis in Support of the Agribusiness Sector (SDASAS)" Project. It provided high priority to the improvement of statistics on chicken (layer and broiler) and swine.

In 1992, the Livestock and Poultry Enterprise Survey (LPES) was conducted which aimed to update and build the List Frame of L&P farm establishments (commercial farms). In 1994 and 1997, the 2nd and 3rd LPES for layer, broiler and swine were conducted, respectively.

Since 1982 until 1991, BAS was conducting its monitoring of animals and birds slaughtered/dressed in slaughterhouses and poultry dressing plants independent from the then National Meat Inspection Commission (NMIC), now National Meat Inspection Service (NMIS). However, in 1992 also under the USAID-SDASAS project, the BAS-NMIS networking on slaughter statistics was conceptualized and implemented. It was designed for the two (2) agencies to collaborate in the data collection, compilation and summarization of data up to validation and data sharing. The main objective of the collaboration was to come up with consistent data holdings on slaughter.

In the early 1990s, a modification of the design of the BLPS was made, along with those of the PCPS and Palay and Corn Stock Survey (PCSS1). BAS started to use sub-samples of the PCPS for both the BLPS and PCSS.

In 1996 and in 2002, two (2) surveys were conducted namely: 1) Census of Dairy Enterprises and, 2) the Dairy Enterprises Inventory and Profiling (DEIP). These two (2) activities were both funded by the collaborating agencies which have stakes at dairy namely: the National Dairy Authority (NDA) (formerly Philippine Dairy Corporation (PDC), Philippine Carabao Center (PCC), Bureau of Animal Industry (BAI), and the University of the Philippines at Los Baños Dairy Training and Research Institute (UPLB- DTRI). Both surveys aimed to have a baseline data on the head count of dairy animals in the country, production and disposition of fresh milk. Its major output was a master sampling frame for dairy surveys.

In 2006 and 2010, other milestones in the L&P data system were achieved through the following: 1) the Avian Population Survey (APS) and 2) The Livestock Population Survey (LPS), respectively. With support coming from the Department of Agriculture, these two (2) surveys generated the first ever household barangay level data on animal population, number of raisers and number of commercial farms in the country. The surveys were done in collaboration with DA livestock agencies namely: PCC, BAI, LDC, NDA, and the DA-RFUs in sixteen (16) regions. Specifically, the BAI and BAS had worked

together in converting the APS and LPS outputs into a GIS format presentation (refer to National Atlas of Philippine Farm Animal Resources of BAI).

Scope

The BLPS and CLPS are being undertaken in all provinces except Batanes. However, BAS is already working out that before end of 2013. Batanes shall already be included in BAS survey coverage. These cover four (4) major livestock commodities i.e. carabao, cattle, swine and goat; and seven (7) poultry commodities i.e. chicken by type (native, broiler, layer), native chicken eggs, commercial layer eggs, duck and duck eggs.

The Survey of Animals Slaughtered in Slaughterhouses and Poultry Dressing Plants (SSHPDP) covers the same types of livestock and only broilers for chicken. It is being conducted in all provinces nationwide with data obtained from a complete enumeration of accredited slaughterhouses and poultry dressing plants as well as the Locally Registered Meat Establishments (LRMEs) which is being undertaken in collaboration with the NMIS and Office of Provincial and City Veterinary.

The Semi-Annual Survey of Dairy Enterprises is conducted in 46 provinces where dairying activity exists. It covers carabao/buffalo, dairy cattle and dairy goat raised for dairy purpose by dairy cooperatives, dairy commercial farms and institutional farms, privately and government owned institutions i.e. PCC Centers and State Universities. Animals raised in backyard farms for draft purposes but also produce milk for human/household consumption (dual purpose or improved dairy breed animals) are also covered in the survey.

Objectives

The BLPS and CLPS are the two (2) major surveys, which aim to generate primary data on inventory/ population and supply and disposition of animals from backyard farms (small holder) and commercial farms.

The Survey of Animals Slaughtered in Slaughterhouses and Poultry Dressing Plants complements the BLPS and CLPS. It aims to generate data on animals slaughtered and, birds dressed in a slaughter/dressing facility or structure accredited by NMIS and locally registered meat establishments (LRMEs).

The Semi-Annual Survey of Dairy Enterprises generates data on inventory of dairy animals and milking dams by type and by age and, fresh milk production and disposition by source.

Purpose

The purpose of the survey is to be able to determine/measure the performance of the livestock and poultry industry.

Contents

The survey covers the following information:

1. Inventory of animals
   Data are presented in number of head by quarter (swine) by semi-annual (cattle, carabao and goat) by farm type by age and by classification i.e. backyard, commercial and total; sow, fatteners/finishers, gilts, piglets
2. Supply -Disposition of animals
   Data are presented in number of head, national level and annually for total farms.
3. Inventory of Poultry
   Data are presented in number of birds by semi-annual for duck and, by quarter for chicken by type i.e. native, broiler, and layer.
4. Supply -Disposition of Poultry
   Data are presented in number of birds national level and annually by type of chicken and by type of poultry.
5. Volume of Production (liveweight)
   Data are presented in metric tons liveweight (total farms) national and by region.
6. Volume of Meat Production (carcass weight)
   Data are presented in metric tons carcass weight, national and by region.
7. Total animals slaughtered and poultry dressed
   Data are presented in number of head/birds, national and by region.
8. Animals slaughtered in abattoir and poultry dressed in dressing plants
   Data are presented in number of head/birds, national by region and by province.
9. Inventory of Dairy Animals
   Data are presented in number of head by dairy animal type and by age classification, national.
10. Dairy Production (Liquid Milk Equivalent or LME)
    Data are presented in liters LME national by animal type and by source, national.
11. Inventory of all avian species raised in the country and number of poultry commercial farms

Data are presented in number of birds by number of household raisers and number of commercial farms barangay as of July 2006.

12. Inventory of livestock animals raised in the country and number household raisers and number of livestock commercial farms *Data are presented in number of head by number of household raisers and number of commercial farms barangay as of April 2010.*

3.3.4.2 Survey Design

1. Survey: Backyard Livestock and Poultry Survey (BLPS)

Sampling Frame

The BLPS uses the sampling frame of the PCPS. The sample barangays in the BLPS are sub-samples of PCPS.

Sampling Design/Statistical Unit/Selection Procedure

For pure palay and pure corn provinces (those provinces which produces either palay only or corn only), one replicate consisting of ten (10) sample barangays was covered. For overlap palay and corn provinces (those provinces producing both palay and corn), five (5) barangays were drawn randomly from one replicate of the palay samples and five (5) barangays from one replicate of the corn samples. For other provinces (neither corn nor palay is the major produce), only five (5) sample barangays were drawn.

In the selection of sample households (SSU), the BLPS incorporated non-farming household, in addition to farming household of the PCPS. Selection of the five (5) non-farming households was done thru the right coverage approach with defined starting point and random start.

Main Data Items and Variables for Operational Purposes

1. Inventory/population
2. Number of births/hatched
3. Sold live for slaughter and sold for other purposes
4. Slaughtered in the households
5. Deaths/losses
6. Eggs laid yesterday

Reference Period

The reference period for the inventory is the first day of the month following the reference quarter, i.e.

- As of April 1 for the first quarter
- As of July 1 for the second quarter
- As of October 1 for the third quarter
- As of January 1 for the fourth quarter

The reference period for other items is cumulative for the reference quarter, i.e.

- April survey round - January to March for the first quarter
- July survey round - April to June for the second quarter
- October survey round - July to September for the third quarter
- January survey round - October to December for the fourth quarter

Period of Data Collection: BLPS is conducted during the first seven (7) days of the first month after the reference quarter.

Geographical Scope: The survey covered all provinces including Dinagat Islands and two (2) chartered cities (Davao City and Zamboanga City). The province of Batanes is excluded

2. Survey: Commercial Livestock and Poultry Survey (CLPS)

Sampling Frame:

For carabao, cattle, goat, and duck: Sampling frames were based on the results of the October 1992 Livestock and Poultry Establishment Survey (LPES) - In 1994 and 1997, the 2nd and 3rd LPES for layer, broiler and swine were conducted, respectively. In 2004 BAS under its frame management system, undertook an updating activity for commercial farm for swine. In 1997 the frame for duck was updated in producing provinces namely: Bulacan, Nueva Ecija, Pampanga, Tarlac, Isabela, Laguna, Rizal, and Albay.

For the dairy farms and operators including backyard and cooperatives, there were listing activities in 1996 and the list was updated in 2002.

In 2006 and 2010, comprehensive frame updating or listing activities were conducted under two (2) nationwide surveys called the Avian Population Survey (APS) and, the Livestock Population Survey (LPS) respectively. The two (2) surveys generated data on the number of household raisers from backyard farms and list of commercial farms in the country.

Sampling Design/Statistical Unit/Selection Procedure

Complete enumeration was done in provinces with 20 farms or below while a stratified random sampling was employed for provinces with more than 20 farms. Farm enterprises were stratified using the Dalenius Hodges method with the maximum housing capacity as the measure of size. The number of strata per province ranged from two (2) to four (4) depending on the population or on the heterogeneity or homogeneity of the maximum housing capacity. Sample allocation for each stratum was done using the Neyman procedure with coefficient of variation set at five (5) percent.

A minimum of five (5) sample farms per stratum was allocated, unless the total number of farms in the stratum was less than five (5), in which case, all farms in the stratum were enumerated. In each stratum, sample farms were drawn using simple random sampling.

Main Data Items and Variables for Operational Purposes

1. Inventory/population
2. Number of births/hatched
3. Sold alive for slaughter and sold live for other purposes
4. Slaughtered in the farm
5. Deaths/losses
6. Egg-laying efficiency ratio

Reference Period

The reference period for the inventory is the first day of the first month following the reference quarter, i.e.

- As of April 1 for the first quarter
- As of July 1 for the second quarter
- As of October 1 for the third quarter
- As of January 1 for the fourth quarter

The reference period for other data items, i.e. births, sold live and etc. is cumulative for the reference quarter.

Period of Data Collection: CLPS is conducted during the last eight (8) days of the last month of the reference quarter.

Geographical Scope: The survey covered all provinces including Dinagat Islands and two (2) chartered cities (Davao City and Zamboanga City). The province of Batanes is excluded.

3. Survey: Semi-Annual Survey of Dairy Enterprises (SSDE)

Sampling Frame

The sampling frame was based on the list of dairy enterprises for cattle and carabao which can be generated in the Dairy Enterprise Inventory Profiling Project.

The dairy enterprises were categorized as follows; single proprietorship, cooperatives, corporation, government owned and private institutions.

** Note: no farms listed under incidental and cooperative farms for goat dairy enterprise*

Sampling Design/Statistical Unit/Selection Procedure

A systematic sampling method was used for individual and/or backyard carabao dairy farms. The sample size for each province was proportional to the number of existing stocks in the province. Sample farms were drawn using a balanced systematic sampling. A complete enumeration of dairy corporations, commercial farms, government-owned and private dairy institutions was utilized. Data from cattle and carabao dairy cooperatives were obtained from the monitoring report of specialized agencies (i.e. Philippine Carabao Center and National Dairy Authority) that assist and monitor the performance of these cooperatives.

Main Data Items and Variables for Operational Purposes

1. Animal inventory and age classification
2. Milk production and disposition
3. Average price per liter

Reference Period and Geographical Scope:

Data on milk production are generated quarterly while the reference period for the animal inventory is set every January 1 and July 1. Data collection is scheduled during the last eight (8) days of the reference semester. The dairy survey is being conducted in 46 provinces where dairying exists.

4. Survey: Survey of Slaughterhouses and poultry Dressing Plants (SSHPDP)

Sampling Frame

The sampling frame was based on the list of accredited slaughterhouses and poultry dressing plants provided by NMIS and the list of LGU- registered slaughterhouses and dressing areas with structure.

Sampling Design/Statistical Unit/Selection Procedure

Complete enumeration of slaughterhouses and poultry dressing plants is applied.

Main Data Items and Variables for Operational Purposes

1. Number of head slaughtered/dressed
2. Dressed weight by animal type

Period of Data collection: It is done monthly and the data from this survey are presented quarterly with monthly disaggregation.

Geographical Scope: All provinces including Dinagat Islands and two (2) chartered cities (Davao City and Zamboanga City). The province of Batanes is excluded.

5. Survey: Avian Population Survey (APS)

Sampling Frame

This was a census of all avian backyard operators/raisers using "Key Informant Approach" and complete enumeration of commercial enterprises/farms engaged in raising avian species.

Main Data Items and Variables for Operational Purposes

1. Inventory of all avian species raised in the country
2. Number of backyard poultry raisers
3. Number of commercial poultry farms in the country

Reference Period

As of July 2006 (specifically, as of the day of interview/visit within the month of survey operation)

Date of Data Collection: July 1- 31, 2006

Geographical Scope: The survey was conducted in almost all barangays and municipalities/cities in all provinces. This excluded the province of Batanes.

6. Survey: Livestock Population Survey (LPS)

Sampling Frame

This was a census of all livestock backyard operators/raisers using "Key Informant Approach" and complete enumeration of commercial enterprises/farms engaged in raising livestock animals.

Main Data Items and Variables for Operational Purposes

1. Inventory of all livestock animals raised in the country
2. Number of backyard livestock raisers
3. Number of commercial livestock farms in the country

Reference Period: As of April 2010 (specifically, as of the day of interview/visit within the month of survey operation)

Period of Data Collection: March 1- 31, 2010

Geographical Scope: The survey was conducted in all barangays and municipalities/cities covering all provinces including the province of Batanes.

3.3.4.3 Conduct, Operations, Data Quality Control

The "enterprise or farm approach" is employed in the CLPS. Data collectors, who are regular staff of the Bureau, are required to go to the enterprise or farm site and interview a qualified respondent, who shall be any of the following:

- Operator/Manager
- Bookkeeper/Accountant
- Authorized Representative of the Enterprise/Farm

On the other hand, BLPS data are collected by regular field staff. Data collectors are required to interview the sample households or any of the qualified respondents, i.e. household head or the spouse or the farm caretaker.

The Semi- Annual Survey of Dairy Enterprises is also an "enterprise or farm approach" survey which generates data on inventory of dairy animals respective of animal type i.e. Carabao/Buffalo, Cattle and Goat; milk production and disposition of milk. The data are collected by regular BAS staff in the Provincial Operations Centers who conduct direct interview of respondents for dairy corporations, commercial farms, government and privately-owned dairy institutions. Data from NDA- assisted dairy cooperatives are obtained from NDA Head Office in Quezon City while, data from PCC- assisted buffalo dairy cooperatives are obtained from PCC Headquarter Office in Munoz, Nueva Ecija. Data from these agencies are obtained by the regular staff of BAS Central Office in Quezon City through electronic mails.

Data collection of the SSHPDP is done right at the slaughterhouse and poultry dressing plant using common questionnaires. The forms are

designed for daily recording and electronic data processing of the number animals slaughtered/dressed.

On the other hand, BLPS data are collected by regular field staff. Data collectors are required to interview the sample households or any of the qualified respondents, i.e. household head or the spouse or the farm caretaker.

The Semi- Annual Survey of Dairy Enterprises is also an "enterprise or farm approach" survey which generates data on inventory of dairy animals respective of animal type i.e. Carabao/Buffalo, Cattle and Goat; milk production and disposition of milk. The data are collected by regular BAS staff in the Provincial Operations Centers who conduct direct interview of respondents for dairy corporations, commercial farms, government and privately-owned dairy institutions. Data from NDA- assisted dairy cooperatives are obtained from NDA Head Office in Quezon City while, data from PCC- assisted buffalo dairy cooperatives are obtained from PCC Headquarter Office in Munoz, Nueva Ecija. Data from these agencies are obtained by the regular staff of BAS Central Office in Quezon City through electronic mails.

Data collection of the SSHPDP is done right at the slaughterhouse and poultry dressing plant using common questionnaires. The forms are designed for daily recording and electronic data processing of the number animals slaughtered/dressed.

The NMIS Meat Inspectors stationed at the accredited slaughterhouses and poultry dressing plants record slaughter data either by using the prescribed BAS-NMIS common slaughter form. Likewise, LGU Meat Inspectors, Market Administrators, Provincial/City Veterinarians assigned in the LGU-registered slaughterhouses, Locally Registered Meat Establishments (LRMEs) accomplish the BAS-NMIS common slaughter form. BAS personnel in return collect the duplicate BAS-NMIS common slaughter form from both NMIS and LGU.

Animals/Birds Slaughtered/dressed in areas not registered by LGU are called "slaughtering in other areas" such as in the household, market places and or other areas in the localities. Data on slaughtering in the households or commercial farms are being generated for BLPS and CLPS while those in other areas except households and farmers are gathered thru key informants. Data processing is the sole responsibility of BAS in the POCs and ROCs. During survey operations, the Statistical Operations Coordination

Division (SOCD) serves as the monitoring hub and communication action center of the Bureau.

Consequently, the following flow of communication is observed:

- All communications coming from the BAS Central Office and going to the Operations Centers emanate from the Office of the Director through the SOCD.
- All communications coming from the Operations Centers are addressed to the Office of the Director through the SOCD, Attention: Livestock and Poultry Statistics Division.

Objective and scientific approaches are employed in large periodic surveys such as livestock for reasons of cost efficiency and reliability. However, as in any other large surveys, livestock surveys are not devoid of sampling and non-sampling errors. Thus, quality control checks are employed at various stages of the activity. During the preparatory stage, rounds of reviews are made before the survey instruments are reproduced for field operations. One important aspect of implementing the field operations is the training of data collectors conducted to ensure that the procedures and concepts are correctly understood. Spot-checking and back-checking activities are critical aspects of field supervision that enable the system to see the errors committed in the field operations and this time are being rectified as necessary.

Another layer of quality control is done during the processing and analysis phases of the survey. Aside from instituting data quality control into the computer processing systems, several methods of data review and analyses are being done before any livestock statistical product is released. Among these are:

- internal consistency checks of data (checking for outliers, range checks and completeness check)
- comparing data with those from external sources
- use of Supply Disposition Accounting (S-D) and Total Slaughter vs Consumption and other uses to validate consistency of production estimates with other indicators derived from the survey, i.e. inventory, births, deaths and slaughter.

3.3.4.4 Statistical Report

- Annual Carabao Industry Performance Report
- Annual Cattle Industry Performance Report
- Annual Chicken Industry Performance Report

- Annual Duck Industry Performance Report
- Annual Goat Industry Performance Report
- Annual Swine Industry Performance Report
- Annual Dairy Industry Performance Report
- Semi-Annual Carabao Industry Performance Report
- Semi-Annual Cattle Industry Performance Report
- Semi-Annual Chicken Industry Performance Report
- Semi-Annual Duck Industry Performance Report
- Semi-Annual Goat Industry Performance Report
- Semi-Annual Swine Industry Performance Report
- Avian Population Survey in the Philippines
- Livestock Population Survey in the Philippines

3.3.5 Fisheries Production Surveys

- Monthly Commercial Fisheries Survey (MCFS)
- Quarterly Commercial Fisheries Survey (QCFS) (Traditional Landing Centers)
- Quarterly Commercial Fisheries Survey (QCFS) (PFDA, LGU and Privately- Managed Landing Centers)
- Monthly Municipal Fisheries Survey (MMFS)
- Quarterly Municipal Fisheries Survey (QMFS) (Traditional Landing Centers)
- Quarterly Municipal Fisheries Survey (QMFS) (PFDA and LGU- Managed Landing Centers)
- Quarterly Inland Fisheries Survey (QIFS)
- Quarterly Aquaculture Survey (QAqS)
- Aquaculture Production Survey (AqPS)

3.3.5.1 Overview

Historical Background

The Philippine Fisheries Commission had an annual publication entitled Fisheries Statistics of the Philippines Yearbook. Data users, both local and international, raised questions about official statistics on fisheries, particularly, catch and landing in terms of reliability and meeting the needs of planners. This situation led to the visit of Food and Agriculture Organization (FAO) Statisticians who recommended improvements in the fisheries statistical system in the Philippines.

The generation of statistics on fish caught by commercial fishing vessels during the 50s and the 60s was dependent solely on monthly reports submitted by commercial fishing boat operators. These reports were consolidated and summarized at the Bureau of Fisheries and Aquatic Resources (BFAR). However, there was the impression that commercial fishing boat operators might be under-reporting their catch because of tax-related concerns. To correct this probable underestimation of catch, a raising factor was applied to the reported volume of catch. From 1951 to 1962, a raising factor of three (3) was used and was raised to four (4) until 1968. Seemingly, this method had no scientific basis and it was found out to have many defects, and thus several innovations were introduced by the FAO Statisticians.

Aside from the fish caught reports, actual survey was conducted in major landing centers in the country in 1976. The estimated monthly unloadings in a sample landing center was divided by the total catch reported in the fish caught reports submitted by fishing boat operators for the same month. The result was the correcting factor to be used for minor or un-surveyed landing centers in the province.

During the 60s and early 70s, reports from six (6) municipalities were used to estimate the total municipal catch in the country. Assumed annual increase rates were applied to estimate total catch for the following years. There was no existing sampling frame and no breakdown of catch for marine and inland fisheries. With the recommendation of the FAO Statisticians, all landing centers in the country were listed in mid 70s as sampling frames for marine fisheries.

A survey design for commercial and municipal fisheries was developed and implemented in 1976. Improvements in surveys included additional data items in the survey forms such as number of boats unloading, volume of fish landed by species, by fishing gear, by fishing ground, number of hauls made during the fishing trip, number of trips made during the month, number of fishing hours. This was done until the mid-80s.

With the creation of the Bureau of Agricultural Statistics (BAS) in 1987, the mandate of collecting fisheries statistics was transferred from BFAR to BAS. Data collection was temporarily suspended mainly due to administrative reasons. Alternative methods of estimation were used to produce fisheries statistics in the absence of surveys.

Estimates of fish production were done at the national level with some indicators coming from BAS Operations Centers. Regional and provincial outputs were distributed with 1985 as the baseline data.

For inland municipal fisheries, the FAO Statisticians introduced a survey form in 1969 wherein annual production data was gathered through observations of the Fisheries Regional Offices. The first nationwide listing of all households engaged in inland fishing was done in 1997. Quarterly survey of households using simple random sampling was first implemented in 1998. Since then, this survey served as the basis of estimation of catch of inland fishing households.

In 1990, the BAS served as the data collection arm of the National Fishery Information Service (NFIS) under the Fishery Sector Program (FSP) of the Department of Agriculture (DA). For the commercial fisheries survey, sampling frame was the 1991 list of commercial fish landing centers stratified into major (top 35th percentile) and minor (remaining percentile). The survey covered 144 sample landing centers in 48 provinces nationwide. Complete enumeration was done for major commercial landing centers and systematic sampling for the minor landing centers. Monthly data collection was done on an every other day frequency. Data collection under the FSP-NFIS ended in 1995.

For municipal fisheries survey, 12 priority bays were initially monitored in 1991 and 1992. The sampling frame was the list of all landing centers in 20 provinces surrounding the 12 bays. In 1993, expansion of samples for all fishing grounds was implemented. The improved sampling design was done until the end of the project in 1995. The latest information on marine catch by fishing ground by gear and by species was published in 1993.

The termination of the project affected the release of fisheries statistics in terms of coverage, accuracy and completeness. To come up with national estimates, top producing provinces for commercial and municipal fisheries were surveyed with limited data items. Tabulation by species, by fishing gear, by fishing ground was discontinued. Regional and provincial estimates were the only available levels of disaggregation of unloadings. The lack of resources to support fisheries surveys resulted in quarterly surveys of sample fish landing centers up to the present.

Fishpond was the only known type of aquafarm during the 50s and the 60s. Estimates were from its combined production from brackishwater and

Freshwater fishponds but mostly from the former. Data on area were taken from Fishpond Lease Agreement (FLA) issued by the BFAR for government-leased fishponds, while data on area for privately-owned fishponds were obtained from survey made some years ago. Annual production was estimated by multiplying the area of fishponds by the average productivity of fishponds by province.

Estimates of the average productivity of fishponds per hectare per year by province were derived by the Fisheries Commission without the conduct of a survey. There was no available data on area for brackishwater and freshwater fishponds separately. To determine the average productivity of fishponds by province and to replace the unreliable factors used in the estimation, 200 sample operators were interviewed.

In 1991, listing of all brackishwater fishpond operators was done nationwide under the FSP. Meanwhile, listing of all other types of aquafarms was accomplished in 1992. Semi-annual surveys of aquafarms in 56 provinces started in 1992. When the project ended in 1995, production indicators were taken from surveys of aquafarms from 14 to 27 major producing provinces. From early 2000 to 2011, aquaculture production was estimated based on quarterly surveys of top five (5) operators in top five (5) municipalities in a province for each type of aquafarm. At present, the number of sample operators per municipality has been increased to eight (8).

Scope

The Fisheries Production Surveys are divided into:

A. Commercial Fisheries Surveys

Commercial fishing refers to the catching of fish with the use of fishing boat with a capacity of more than three (3) gross tons for trade, business or profit beyond subsistence or sports fishing.

All regions, except CAR, are covered by commercial fisheries surveys. There are 57 provinces covered by commercial fisheries surveys in these regions.

1. Monthly Commercial Fisheries Survey
   Monthly Commercial Fisheries Survey is conducted when funds are available to support an every other day data collection in sample landing centers.
   This survey is conducted in sample traditional landing centers in 57

provinces nationwide. Respondents from unloading fishing boats are interviewed covering all species unloaded in the landing center. The BAS hires Contractual Data Collectors (CDCs) to undertake the data collection.

2. Quarterly Commercial Fisheries Survey (Traditional Landing Centers)
   This survey is conducted quarterly in sample traditional landing centers in 57 provinces nationwide. It is an alternative method in case of unavailability of funds. The POC staff undertake the data collection.
3. Quarterly Commercial Fisheries Survey (PFDA, LGU and Privately-Managed Landing Centers)
   Data on unloadings from PFDA, LGU and privately managed landing centers are gathered by POC staff using a collection form prepared at the Central Office (Monthly Fish Catch Report at Government and Private Fishing Ports) This activity is conducted quarterly covering three month - records of unloadings in the landing centers.

B. Municipal Fisheries Surveys

Municipal fishing is fishing within municipal waters using fishing vessels of three (3) gross tons or less, or fishing not requiring the use of fishing vessels. The two (2) sub-sectors of municipal fisheries are Marine Municipal and Inland Municipal.

1. Monthly Municipal Fisheries Survey
   This is a more detailed survey on monthly catch and fishing effort of municipal fishermen. Data on catch and effort by species, by fishing gear and by fishing ground are collected in sample fishing boats in sample landing centers by hired data collectors. This survey requires bigger operational expenses.
   The data collector interviews fisherman of each sample unloading boat on volume of species caught by kind, fishing method used, name of fishing ground, price per kilogram by species, number of crew, number of fishing hours per trip and number of hauls.
   This survey covers 66 coastal provinces and cities nationwide. The primary objective of the survey is to gather data on marine fish catch by boats of three (3) gross tons or less by gear by species by fishing ground by province.
2. Quarterly Municipal Fisheries Survey (Traditional Landing Centers)
   This is an alternative survey for every other day survey of marine

municipal fish catch. This survey is implemented when there is an insufficient fund for wages of data collectors. The same list of samples is used in this survey. Instead of data collectors, POC staffs are assigned to interview at least five (5) key informants who are knowledgeable in the fishing activities in the sample fish landing center during the third or fourth week of the last month of the quarter. Data on the monthly volume of fish landed and monthly average price by species for the reference quarter are gathered.

3. Quarterly Municipal Fisheries Survey (PFDA and LGU- Managed Landing Centers)
   Aside from the common or traditional fish landing centers, there are landing centers that are managed by the Philippine Fisheries Development Authority (PFDA) or by the Local Government Units (LGUs). Fishermen who choose to land their catch in these landing centers pay a certain amount as landing fee. There are four (4) PFDA fish ports and 11 LGU-managed landing centers where municipal boats unload their catch. Since records on volume and price of fish unloaded by species are maintained in PFDA and LGU offices, no data collector is assigned to observe actual unloadings of fish. These records are collected by POC staff on a monthly basis.
   Data gathered from administrative records serve as additional inputs to regular surveys.
4. Quarterly Inland Fisheries Survey
   Data on catch from rivers, lakes, swamps, creeks, dams, reservoirs, and other bodies of water are collected from households where there is one or more member/s engaged in inland fishing.

C. Aquaculture Surveys

Aquaculture is defined as fishery operation involving all forms of raising and culturing of fish and other fishery species in fresh, brackish and marine water areas.

1. Aquaculture Production Survey
   This is a probability survey. The hired Contractual Data Collectors (CDCs) conduct interviews of sample aquafarm operators.
2. Quarterly Aquaculture Survey
   This survey is conducted quarterly in 80 provinces and Metro Manila, covering 6,722 aquafarms. BAS field staff conduct the interviews of sample aquafarm operators.

Objective

The surveys aim to generate data on volume and value of fish catch, aquaculture production and value by aquafarm type, by species, by quarter at the national, regional and provincial levels.

Purpose

The purpose of the survey is to be able to determine/measure the performance of the fisheries industry.

Contents

The survey covers the following data items as presented in the survey instruments:

A. Monthly Commercial Fisheries Survey

1. General Information : Region, Province, Landing center name, Stratum and Unloading time.
2. Boat Information : Name of fishing boat, Type of boat, tonnage class and type of fishing gear used.
3. Fishing Effort : Number of crew, Number of fishing days per trip, Total number of hauls
4. Fish Catch : Fishing ground, Species, Quantity in local unit, Weight of one local unit, Price per local unit, Raising factor
5. Summary of Unloadings
6. Total Fish Catch

B. Monthly Municipal Fisheries Survey

The same data items as Survey of Commercial Fish Catch except that in Item 3 Fishing Effort, number of fishing hours per trip is indicated.

C. Quarterly Inland Fisheries Survey

The data collection form gathers information on volume and prices of catch by species and by quarter.

D. Aquaculture Production Survey

1. Sample Identification : Region, Province, Municipality, Barangay, Aquafarm Serial Number, Stratum, Expansion Factor

2. Aquafarm Information : Aquafarm Area, Aquafarm Type, Environment, Management System, Culture System
3. Production Information: Species, Quantity Stocked, Area Harvested, Production, Quantity Stocked
4. Remarks

3.3.5.2 Survey Design

1. Survey: Monthly Commercial Fisheries Survey

Sampling Frame

The sampling frames used for survey of commercial fisheries are the updated list frames of landing centers by province from 2005 to date.

Sampling Design / Statistical Unit / Selection Procedure

Stratified sampling is employed with volume of unloadings per day as stratification variable. The landing center serves as the primary sampling unit while the fishing boat serves as secondary sampling unit. The landing centers are group into the following strata:

Stratum 1 - consists of the top-producing fish landing centers
Stratum 2 - consists of the major producing fish landing centers
Stratum 3 - consists of all other traditional landing centers in the province

Simple random sampling is used in drawing the sample landing centers from the stratum. In each landing center, if the number of unloading boats is 15 or less, a complete enumeration of boats is done. If more than 15 boats unloading during the peak unloading time, a simple random sampling of boats is employed. The number of sample landing centers varies by province depending on the resources for wages of data collectors.

Main Data Items and Variables for Operational Purposes

1. Volume of fish unloaded by commercial fishing boats by species, by fishing gear, by province
2. Price per kilogram by species
3. Fishing effort variables (number of crew, number of fishing days per trip and number of hauls for net gears)

Reference Period: Current quarter

Date of Data Collection: Every other day collection of data is done every month in every sample fish landing center

Geographical Scope: 57 provinces. If more funds become available, more samples are covered.

2. Survey: Quarterly Commercial Fisheries Survey (Traditional Landing Centers)

This survey uses the same samples selected for the monthly survey. Simple random sampling is used in drawing the sample landing centers in the stratum. In each landing center, five (5) key-informants are asked on the monthly volume of unloadings by species and the corresponding price per kilogram.

3. Survey: Quarterly Commercial Fisheries Survey (PFDA, LGU and Privately- Managed Landing Centers)

All PFDA, LGU, and privately- managed landing centers (LCs) nationwide are visited by provincial personnel on a quarterly basis.

Main Data Items and Variables for Operational Purposes

1. Volume of fish unloadings
2. Price per kilogram by species

Reference Period: Current quarter

Date of Data Collection: Second week of the last month of the quarter
1st quarter - Week 2 of March
2nd quarter -Week 2 of June
3rd quarter - Week 2 of September
4th quarter - Week 2 of December

Geographical Scope: Fifty seven (57) provinces

4. Survey: Monthly Municipal Fisheries Survey

Sampling Frame

The list of all municipal fish landing centers by province serves as the sampling frame for this survey.

Sampling Design/Statistical Unit/Selection Procedure

Stratified sampling is employed with volume of unloading per day as

unit while the fishing boat serves as the secondary sampling unit. The landing centers are grouped into the following strata:

Stratum 1 - consists of the top producing fish landing centers
Stratum 2 - consists of the major producing fish landing centers
Stratum 3 - consists of all other landing centers

Simple random sampling is used in drawing the sample landing centers from the stratum. A contractual data collector is assigned in every sample landing center. In cases where several fishing boats landed simultaneously and it is impossible for the data collector to interview every fisherman, systematic sampling of boats is employed. If the number of unloading boats is 15 or less, a complete enumeration of boats is done. If the boats are numerous and different gears are used, data collector enumerates as many sample boats as he could so that all types of gears are represented.

Main Data Items and Variables for Operational Purposes

1. Volume of fish unloaded by municipal fishing boats by species, by fishing gear, by province
2. Price per kilogram by species
3. Fishing effort variables number of crew, number of fishing hours per trip and number of hauls for net gears)

Reference Period: Current quarter

Date of Data Collection: Every other day collection of data is done every month in every sample fish landing center

Geographical Scope: 67 coastal provinces

5. Survey: Quarterly Municipal Fisheries Survey (Traditional Landing Centers)

This is an alternative survey for every other day Municipal Fisheries Survey. This survey is implemented when there is an insufficient fund for wages of data collectors. The same list of samples is used in this survey. Instead of data collectors, POC staff conducts the interview of at least three key informants who are knowledgeable in the fishing activities in the sample fish landing center during the third or fourth week of the last month of the quarter. Data on the monthly volume of fish landed and monthly average price by species for the reference quarter are gathered.

6. Survey: Quarterly Municipal Fisheries Survey (PFDA and LGU-Managed Landing Centers)

Aside from the common or traditional fish landing centers, there are landing centers that are managed by the Philippine Fisheries Development Authority (PFDA) or by the Local Government Units (LGUs). Fishermen who choose to land their catch in these landing centers pay a certain amount as landing fee. There are four (4) PFDA fish ports and 11 LGU-managed landing centers where municipal boats unload their catch. Since records on volume and price of fish unloaded by species are maintained in PFDA and LGU offices, no data collector is assigned to observe actual unloadings of fish. These administrative records are collected by POC staff on a monthly basis. Data gathered from these sources serve as additional inputs to regular surveys.

Main Data Items and Variables for Operational Purposes

1. Volume of fish unloadings
2. Price per kilogram by species

Reference Period: Current quarter

Date of Data Collection: Second week of the last month of the quarter

1st quarter - Week 2 of March
2nd quarter - Week 2 of June
3rd quarter - Week 2 of September
4th quarter - Week 2 of December

Geographical Scope: 67 coastal provinces

7. Survey: Quarterly Inland Fisheries Survey

Sampling Frame

The list of all households engaged in inland fishing by province is the sampling frame.

Sampling Design/Statistical Unit/Selection Procedure

Using the principles of simple random sampling, sample households are drawn from the list. At the minimum, 10 sample households are interviewed every quarter by POC staff.

Main Data Items and Variables for Operational Purposes

1. Monthly catch of the household by species for the reference quarter
2. Prevailing price of fish catch
3. Quarterly volume of fish catch from different bodies of water

Reference Period: Current quarter

Date of Data Collection: Second week of the last month of the reference quarter

Geographical Scope: 75 provinces

8. Survey: Aquaculture Production Survey

Sampling Frame

The sampling frame consists of the listing of aquafarms for the following sub-sectors:

- Brackishwater fishponds
- Freshwater fishponds
- Freshwater fishpens
- Freshwater fishcages
- Marine fishpens
- Marine fishcages
- Oyster farms
- Mussel farms
- Seaweed
- Small farm reservoirs
- Rice-fish culture

There is a continuing updating of the above list frames on varying reference periods.

Sampling Design/Statistical Unit/Selection Procedure

The survey adopts the stratified random sampling with the aquafarm as the sampling unit. By type, aquafarms are stratified according to area into three (3) strata which boundaries are determined based on the distribution of the data in the province. Systematic sampling is employed in the selection of sample aquafarms from each stratum.

Main Data Items and Variables for Operational Purposes

1. Volume of production
2. Price per kilogram
3. Area harvested
4. Yield by quarter by type of aquafarm and by species

Reference Period: Survey is usually conducted during the last month of the quarter. The survey form gathers information by semester with quarterly breakdown. The reference period is as follows:

Survey Month	Reference Period
March	Oct – Dec, Jan – Mar
June	Jan – Mar, Apr – June
September	Apr – June, July – Sep
December	July – Sep, Oct - Dec

Date of Data Collection: Every third week of the last month of the quarter

Geographical Scope: All 81 provinces and Metro Manila

9. Survey: Quarterly Aquaculture Survey

Sampling Frame: List frame of aquafarm by type

Sampling Design/Statistical Unit/Selection Procedure

By aquafarm type, top producing municipalities with cumulative share of at least 80% to total area based on Aquaculture Farms Inventory (AqFI).

For each municipality, eight (8) sample aquafarms are selected if the number of aquafarms in the municipality is more than 25. If the number of aquafarms is less than 25, five (5) sample aquafarms are selected.

Main Data Items and Variables for Operational Purposes

1. Volume of production
2. Price per kilogram
3. Area harvested
4. Yield by quarter by type of aquafarm and by species

Reference Period: Quarter

Date of Data Collection: Every third week of the last month of the quarter.

Geographical Scope: 80 provinces and Metro Manila

3.3.5.3 Conduct, Operations, Data Quality Control

Logistics for the regular surveys undertaken by the Bureau of Agricultural Statistics (BAS) are part of the Bureau's budget, while logistics support for ad hoc surveys are from external sources.

To ensure the smooth and successful conduct of the fisheries production surveys, a Technical Working Group (TWG) is created which serves as the clearing-house for the various activities concerning this sub-sector.

All authorities pertaining to the operational procedures of the surveys of the Bureau emanate from the Director. These authorities are then delegated to the field supervisors through the Chief of the Bureau's Statistical Operations Coordination Division (SOCD), the Regional Agricultural Statistics Officers (RASOs) and finally, the Provincial Agricultural Statistics Officers (PASOs).

During survey operations, the SOCD serves as the monitoring hub and communication action center of the Bureau. Consequently, the following flow of communication is observed:

- All communications coming from the BAS Central Office and going to the Operations Centers emanate from the Office of the Director through the SOCD.
- All communications coming from the Operations Centers are addressed to the Office of the Director through the SOCD, Attention: Fisheries Statistics Division.

In the Operations Centers, the RASO is responsible for the monitoring and supervision of the activities of all provinces within the region. The overall supervisor in the province is the PASO. The Assistant PASO, aside from his/her assignment as assistant supervisor in the province, may be given a specific area of supervision, upon the discretion of the PASO. Contractual data collectors (CDCs) usually carry out the data collection for ad hoc activities, whereas for routinary activities, regular field staff are usually tapped to gather the needed information.

In order to minimize non-sampling errors in the surveys, quality control measures are instituted at various phases of the activity, from the conceptualization stage to analysis of the results. Several rounds of reviews are made before the survey instruments are reproduced for field operations. During field operations, attention is given to the conduct of training of data collectors to ensure that the procedures and concepts are correctly understood. Mock interviews and dry-run exercises are made part of the training. Close supervision of field enumerators is a must during data collection. Part of a supervisor's job is the conduct of spot-checking and back-checking activities.

Item-by-item checks on the consistency, completeness and acceptability of the data are done during and after data collection, until the accomplished questionnaires are submitted for electronic data processing, where another layer of consistency and completeness check is made. Once the statistical table generation is done, a series of reviews on the results follows before the data are finally presented and disseminated.

Completion of the output goes hand in hand with the success of a particular activity. Completion of outputs is reached when estimates are affirmed at the end of the National Data Review and made part of the Report on the Performance of Philippine Agriculture.

3.3.5.4 Statistical Report

- Fisheries Statistics of the Philippines
- Fisheries Situationer
  January- March; April- June; January- June; July- September; July- December; January- December

3.3.6 Food Consumption Survey (FCS)

3.3.6.1 Overview

Historical Background

In 1995, the Bureau of Agricultural Statistics (BAS) was tasked by the Department of Agriculture (DA) in collaboration with the National Food Authority (NFA), to conduct a Food Consumption Survey (FCS) to generate per capita consumption of cereals, cereal-based products, cereal substitutes and other selected non-grain commodities. It was a nationwide survey implemented in four (4) quarterly rounds. The BAS, again as a special assignment from the Department of Agriculture (DA), conducted four (4) survey rounds of FCS from 1999 to 2000 to update the results of the earlier survey and examine the extent of rice substitution. In response to the need for a new benchmark information on consumption of agricultural comodities, the BAS with financial support from the DA conducted the third FCS. This was renamed to Survey of Food Demand for Agricultural Commodities (SFD) covering four (4) quarterly rounds from the third quarter of 2008 to second quarter of 2009.

Scope

The 2008-2009 Survey of Food Demand for Agricultural Commodities (SFD)

was a nationwide survey covering 81 provinces, the cities of Zamboanga and Davao, and the National Capital Region.

Food commodities covered in the survey were as follows:

1. Rice (plain)
   - *refers to cooked rice converted in original raw form. Rice consumed includes the quantity of leftover rice which is wasted/ spoiled and fed to animals/pets. Rice purposely cooked for pets and other animals raised by the household are excluded from the household consumption.*

2. Corn
   - *includes corn in cob, corn grits and shelled corn. Corn in cob includes raw, boiled or roasted. Popcorn, cornick, fried corn and "binatog" fall under shelled corn. Corn in cob and corn grits are converted into shelled corn equivalent.*

3. Vegetables, legumes, condiments and root crops
   - *are those acquired fresh. They may be eaten/consumed fresh or cooked. Likewise, fruits are consumed fresh or ripe. Green or unripe papaya and jackfruit are considered as vegetables*.

4. Meat
   - *refers to those acquired fresh and cooked/prepared in the household. Cooked meat (fried, boiled or roasted) which were bought or given and consumed in the household are also included. Processed meat e.g., tapa, tocino, longaniza, and similar products are included only if they are prepared at home.*

5. Egg
   - *refers to table (fresh) egg coming from chicken.*

6. Fish
   - *refers to various fish species such as milkfish, tilapia and galunggong which are in fresh form.*

7. Noodles
   - *include bihon, pasta, canton, fresh miki and instant noodles.*

Objectives

The general objective of this statistical survey was to determine the

Filipinos' current and emerging consumption patterns and habits with regard to rice, corn and other basic food items.

Specifically, the survey aimed to:

1. determine the present average per capita consumption of rice, corn and other basic agricultural food items;
2. determine the emerging consumption patterns as well as the purchasing patterns of the Filipino households;
3. study the current shift in consumer's preference including substitution of rice with other food commodities;
4. provide inputs for the construction of demand functions and estimation of elasticities of demand for agricultural commodities; and
5. analyze the relationship of demographic and socio-economic factors on food consumption patterns.

Purpose

The survey aimed to generate data on the domestic consumption of rice and other basic food items that could serve as inputs in the estimation of the total food requirements of the country. The result would be a basis for planners and policy makers in targeting rice production and importation.

Contents

The survey contained the following data items:

1. Household characteristics
2. Household food consumption and buying pattern
3. Number of eaters
4. Rice/corn leftovers, wastage and consumption by animals
5. Rice substitution

3.3.6.2 Survey Design

Sampling Frame

The list of barangays enumerated in the 2007 Census of Population (POPCEN) served as the sampling frame for the 2008-2009 SFD. Information on final population counts by barangay as of August 1, 2007 from the 2007 POPCEN was utilized and made part of the sampling frame. The 2007 POPCEN list was reconciled with the most updated geographic codes based on the Philippine Standard Geographic Classification (PSGC) as of March 31, 2008. Aside from the geographic codes and names of municipalities and

barangays, the PSGC contains the urban-rural classification of the barangays as of 2000 and income classification of the cities and municipalities, which were equally important information needed in the development of the sampling frame.

Sampling Design/Statistical Unit /Selection Procedure

The domain of the survey was the province. Exceptions to the rule were the NCR where the domain was the whole region and the Cities of Zamboanga and Davao which were considered as separate domains.

For the 81 provinces and the cities of Zamboanga and Davao, a two-stage sampling design was used with the barangay as the primary sampling unit (PSU) and the household as the secondary sampling unit (SSU). The barangays were first stratified according to their urban-rural classification, forming two strata: one for urban barangays and another for rural barangays. Thereafter, the total number of sample barangays in the province (=16) was allocated proportionately to the number of barangays in the stratum.

In the selection of the PSUs, the barangays were arrayed based on city/ municipality income class. Systematic sampling was then employed in drawing the samples. This ensured that barangays in high and low-income cities/municipalities were represented in the sample. Income class, which was one of the determinants of food consumption patterns among households, was factored in the sampling process on the assumption that it is associated with urbanization. Selection of SSUs within each PSU was done during field data collection using systematic sampling through the right coverage technique, based on pre-assigned starting point (sp), random start (rs), and sampling interval (i).

For the National Capital Region (NCR) a two-stage sampling procedure was also used, with the barangay as PSU and the household as SSU. As in the provinces, stratification was done at the PSU level. However, urban-rural classification was not considered since all the barangays were urban. Instead, the barangays were stratified by district. In each city/municipality, two (2) sample barangays were selected systematically from an ordered list of barangays based on barangay total population. This ensured that large and small barangays, in terms of population were represented in the sample. The same procedure used in identifying the sample households in the provinces was followed in the NCR. However, the sampling interval for urban barangays was i=10.

The same sets of sample barangays and households were covered in all the survey rounds.

Main Data Items and Variables for Operational Purposes

1. Average per capita consumption of agricultural commodities, national and by region
2. Average per capita consumption of agricultural commodities by socio-economic class of households and region
3. Average per capita consumption of agricultural commodities by classification of barangays, by region and province.

Reference Period: Past week or past seven (7) days

Date of Data Collection:

The first survey round was undertaken in August 2008. The succeeding survey rounds were conducted in November 2008, and May 2009. Due to logistic constraints, the planned February round was also conducted in May 2009.

Geographical Scope:

The 2008-2009 Survey of Food Demand for Agricultural Commodities (SFD) covered sample households in urban and rural barangays in 81 provinces, the cities of Zamboanga and Davao, and the National Capital Region (NCR). The 81 provinces included Batanes and the newly created provinces of Dinagat Islands and Shariff Kabunsuan. The latter, however, was dropped from the survey coverage starting the second round.

3.3.6.3 Conduct, Operations, Data Quality Control

For the smooth implementation of the survey, a Project Management Committee and Implementation Teams for different areas of concern were created. Prior to the survey operations, training was conducted to have a uniform understanding of the concepts and procedures. This was an important step towards minimizing the errors committed during field operations. For all the survey rounds, several levels of training were conducted. Training of Central Office technical staff was conducted at the Central Office. They provided technical back-stopping support to the field operations in selected provinces. This was followed by training of the Regional Agricultural Statistics Officers (RASO) and Provincial Agricultural

Statistics Officers (PASOs) and the training of the POC staff who handled most of the field supervision work, and the contractual data collectors (CDCs) who undertook the data gathering. The field training included dry run exercise in a non-sample barangay to enable participants with hands-on experience of the things discussed in the lectures.

The regular POC staff were responsible for reviewing and editing the accomplished questionnaires. These were done to check the acceptability, consistency and completeness of the information recorded in the questionnaire. They were also responsible for spot-checking and back-checking of CDCs' works. The Provincial Agricultural Statistics Officers (PASOs) and Assistant Provincial Agricultural Statistics Officers (APASOs) acted as overall supervisors in the provinces. They also conducted spot-checking and back-checking of survey operations, review of completed and edited questionnaires before submitting them to the Central Office. A report on field data collection was prepared and sent by the POC to the Central Office.

The Regional Agricultural Statistics Officers (RASOs) were responsible for the monitoring and supervision of the survey operations in all the provinces within the region. The Statistical Operations Coordination Division (SOCD) at the Central Office monitored and coordinated the field operations.

Training on data entry and processing of survey returns was provided to the Provincial Processing Officers (PPOs). Data capture and cleaning or error listing of data were done at the Provincial Operations Centers (POCs). The clean data files were sent to the Central Office for further processing and data checking/validation. Output tables were generated for review and analysis. The Data Review and Analysis Team was tasked to review, analyze and interpret the data. The results were reviewed and validated with the results of the previous surveys and other related information.

3.3.6.4 Statistical Report

- Survey of Food Demand for Agricultural Commodities in the Philippines, 2010
  Volume I National and Regional Levels
  Volume II Average Per Capita Consumption by Socio-Economic Class of Households and Classification of Barangays
  Estimating Price and Income Elasticities of Demand of Selected Food Commodities in the Philippines

- Consumption of Selected Food Commodities in the Philippines, 2001
  Volume I National and Regional Levels
  Volume II Regional and Provincial levels
  Volume III By Socio-Economic Class of Households
- Food Consumption Survey of Selected Food Commodities, 1995
  Regional
  Provincial

3.3.7 Farm Prices Survey (FPS)

3.3.7.1 Overview

Historical Background

The generation of farm prices data dated back in 1957 when the then Agricultural Economics Division of the Department of Agriculture and Natural Resources (DANR) started the collection of data on prices received by farmers. On June 22, 1963, the Bureau of Agricultural Economics (BAEcon) was created under Republic Act 3627. BAEcon superseded and absorbed the functions of the Agricultural Economics Division of DANR.

The data system on farm prices was carried out by the Bureau of Agricultural Economics (BAEcon) from 1963 to 1987. In 1987, the BAEcon was reorganized to become the Bureau of Agricultural Statistics (BAS) under the Department of Agriculture by virtue of Executive Order No. 116. It assumed most of the functions of BAEcon and absorbed its personnel. BAS became the principal government agency for the efficient collection, processing, analysis and dissemination of official statistics on agriculture and fisheries one of which is the system of generating and disseminating farm prices data. The FPS has since become a continuing activity of the BAS.

In seeking to pursue a more effective system of generating and disseminating farm prices, the BAS from time to time does assessment of the FPS methodology. This results in the improved data collection and processing procedures for farm prices of agricultural commodities.

Scope

The FPS is a national survey covering all provinces. Each province has a basket of FPS commodities.

Objective

The main objective of the Farm Prices Survey is to generate estimates of farmgate or producers' prices.

Purpose

The outputs of the Farm Prices Survey are used in the periodic valuation of the outputs produced by the agricultural sector. Similarly, these are inputs to the development of price indices to measure the purchasing power of growers of selected agricultural products. Maintenance of farmgate prices will likewise provide needed inputs a) to analyze trends and variations in prices; b) forecasting future supply, demand and prices of agricultural commodities; c) to assist policy makers in the formulation, implementation and administration of economic programs, and d) to guide farmers/raisers in their decision making relative to their agricultural activities geared towards improvement of their profitability.

Contents

The Farm Prices Survey contains information on prices received by producers at the first point of sale.

3.3.7.2 Survey Design

Survey: Farm Prices Survey (FPS)

Sampling Frame

For crops and backyard livestock surveys, there is no formal sampling frame, instead the municipalities are ranked based on past data of volume of production.

For commercial livestock and poultry, the frame is the list of samples of Commercial Livestock and Poultry Survey.

Sampling Design/Statistical Unit/Selection Procedure

For prices received by farmers for crops and backyard livestock and poultry:
It is a two-stage sampling design with municipality, which consists of the top five (5) producing municipalities per commodity per province, as the primary sampling unit and farmer who sold the commodity during the reference period as the secondary sampling unit. In each sample municipality, at least five (5) sample farmers per commodity are selected purposively.

For prices received by livestock and poultry raisers in commercial farms:
It is a stratified sampling following the Commercial Livestock and Poultry Survey procedure. It utilizes the sub-samples of the CLPS for each animal

type. The maximum number of samples required per province is eight (8). In case the total number of farms for each poultry and egg item is less than eight (8), complete enumeration is done. Two (2) samples per stratum are chosen as samples in the province. If there are less than four (4) strata in the province, the number of samples per stratum is increased proportionately to get a provincial total of eight (8).

For prices paid by crop farmers for pesticides:
Respondents for this survey are the dealers of agricultural inputs in the five (5) major crop-producing municipalities and in the provincial capital or trading center. Sample dealers of inputs are those most patronized by farmers. One (1) dealer per municipality will be interviewed. In addition, the three (3) major pesticide dealers in the provincial capital or trading center shall be considered as samples. The maximum number of samples per province is eight (8).

Main Data Items and Variables for Operational Purposes

1. Quantity sold
2. Price per local unit
3. Freight charges/total transport cost of the quantity sold by commodity

Reference Period: Days 1 to 30 of the reporting month

Date of Data Collection: Last 10 days of the month

Geographical Scope: Seventy- nine (79) provinces and two (2) chartered cities (Davao City and Zamboanga City). This excludes the province of Batanes.

3.3.7.3 Conduct, Operations, Data Quality Control

Quality Control and Key Elements for Data Collection

To monitor and sustain quality of data collected for Farm Prices Survey (FPS) the following activities are undertaken:

1. consistency check through review of entries relative to the provincial FPS basket and trading matrix; and
2. non-sampling errors are monitored and minimized by reviewing POC forms/questionnaires.

Quality Control for Data Processing

Manual data processing involves the review of the entries for completeness and acceptability.

Machine processing includes summarization of data according to regional/provincial/basket formats, further evaluation and final tabulation, consistency check through review of data items.

Assessment of Data Quality

Data validation in the Provincial Operations Centers (POCs), Regional Operations Centers (ROCs) and Central Office (CO). The data are reviewed in terms of the following:

Provincial Data Review (PDR)

1. Completeness of commodities
2. Correctness of unit of measure and specifications
3. Consistency of price level compared with previous quarter and previous year
4. Consideration of the following:
    - Seasonality
    - Weather conditions
    - Prior trends of farm price data series
    - Wholesale and Retail Price Data Series
    - Prices reported by other agencies

Regional Data Review (RDR)

1. Completeness of provinces reported
2. Completeness of data requirements
3. Price relationship with other provinces (price comparison across provinces within the region)
4. Comparison of price levels with previous quarter and previous year
5. Accuracy of specifications
6. Accuracy of price ranges
7. Consideration of the following:
    - Seasonality
    - Weather conditions
    - Prior trends of farm price data series
    - Wholesale and Retail Price Data Series
    - Prices reported by other agencies

National Data Review (NDR)

1. Completeness of provincial and regional reports (FPAS)
2. Correctness of unit of measure and specifications
3. Consistency with the basket, matrix, FPS20 and R5
4. Accuracy of price ranges at the national and regional level
5. Consideration of the following:
    - Seasonality
    - Weather conditions

- Trends of farm data series
- Wholesale and Retail Price Data Series

3.3.7.4 Statistical Report

- Producer Price Index for Agriculture
- Statistical Handbook on Prices of Fertilizer and Pesticides

3.3.8 Integrated Agricultural Marketing Information System/ Agricultural Marketing News Service (AGMARIS-AMNEWSS)

3.3.8.1 Overview

Historical Background

Wholesale price monitoring of agricultural commodities, alongside with retail, was started by the then Bureau of Agricultural Economics (BAEcon) with the creation of the Agricultural Marketing News Service (AMNEWSS) under Republic Act 4148. But because of budgetary constraints, the AMNEWSS was launched in 1968, four (4) years after the law was passed. The operations started with the following: 10 radio transceivers, 10 provincial trading centers, 67 wholesale items and 57 retail items.

In 1969, AMNEWSS coverage was expanded to 21 provincial trading centers and 12 Metro Manila markets. Likewise, the number of commodities covered was increased. Other milestones included price dissemination through radio broadcasts, publication in selected print media and distribution of marketing reports to government offices.

In the succeeding years, AMNEWSS underwent several changes in terms of market and commodity coverages, collection frequency and procedures to improve the system, to suit availability of budgetary support and the transition from BAEcon to BAS.

In 1992, through a funding from the United States Agency for International Development (USAID), the AGMARIS was conceptualized. AGMARIS is a system, which follows a systematic approach in assessing and responding to marketing information needs of farmers and traders at the local level and policy makers at the national level.

The AGMARIS design was based on the results of a Marketing and Information Needs Assessment (MINA), a research methodology employing

commodity marketing system and information needs of the data users. It was conducted and implemented in 31 commercial provinces/cities including Metro Manila.

To further improve the price monitoring system and to address the changing needs of data users, the AGMARIS and AMNEWSS were integrated two (2) years after, renaming it to Integrated AGMARIS-AMNEWSS monitoring system. Under this system, 31 AGMARIS sites follow the AGMARIS collection methodology while the rest follow the AMNEWSS procedure. While the collection methodology for the two (2) surveys remained independent, a common processing and dissemination system is used by both the AGMARIS and AMNEWSS, hence the "integration".

Scope

Wholesale Prices

Wholesale prices are classified into wholesale selling and wholesale buying. Each Provincial Operations Center (POC) monitors either wholesale selling or buying or both. Wholesale price survey (WPS) of agricultural commodities is implemented in 66 markets in 55 provinces and cities including Metro Manila. The commodity basket for Wholesale Price Survey has items under crops, livestock, poultry and fisheries items across provinces.

Retail Prices

Retail price survey is undertaken in 81 provinces/cities including Metro Manila covering a total of 105 markets.

Objectives

The main objective of the activity is to implement a comprehensive and responsive marketing information system for unprocessed agricultural commodities which are traded in major local/provincial market centers as well as in strategic markets throughout the country.

Purposes

The purposes are to:

1. conduct wholesale and retail price surveys and other relevant marketing surveys at various frequencies at pre-determined major trading centers throughout the country;
2. undertake quick processing of data at the field level and, thereafter, disseminate these particularly to the farmers and fisherfolk;

3. operationalize an information exchange subsystem among the Provincial Operations Centers (POCs) of the Bureau;
4. publish and disseminate national level reports for policy makers and other interested groups or persons;
5. conduct periodic evaluation of the system that will be the basis for improving the AGMARIS implementation; and
6. conduct statistical analysis of prices with other marketing information.

Contents

The Collection Forms contain the following parts:
1. Commodity Name
2. Respondents' Name
3. Price per unit
4. Price Range (Low/High)
5. Prevailing Prices
6. Comments/Relative to Market Supply-Demand

3.3.8.2 Survey Design

Survey: Integrated Agricultural Marketing Information System/ Agricultural Marketing News Service (AGMARIS-AMNEWSS)

Sampling Frame

For wholesale price data collection: List of traders by type
For retail price data collection: List of traders by commodity group

Sampling Design/Statistical Unit/Selection Procedure

Sample markets are selected based on some criteria.

A. Criteria in selecting markets

Wholesale
1. First point of sale or "bagsakan" area
2. Site of active trading of substantial quantities of varied commodities
3. Accessible to major cross roads and market infrastructure
4. Strategically located relative to production areas

Retail
1. Considerable number of traders
2. Medium to large volume traded
3. Patronized by majority of consumers in the area

4. Receive shipments/stocks from other market or supply area within and outside the province and
5. Strategically located along main roads and accessible transport routes

Commodity Coverage

Commodity coverage for wholesale and retail price survey varies by province. The number of commodities monitored in the different market likewise varies by province. A province can have as many as 77 to 139 items covered for retail prices. However, the national market basket for retail prices consists of only 63 items.

Commodities included in retail price are grouped into:

Cereal
- Roots and Tubers
- Fruits Vegetables
- Poultry and Egg
- Leafy Vegetables
- Meat
- Beans and Legumes
- Fishery and Fishery Products
- Nuts
- Fruits
- Condiments

Criteria for selecting commodities are as follows:

The general criteria used in the selection of commodities in the provincial retail market basket (PRMB) under the retail price survey are:
1. priority crops/item in the province;
2. prices frequently requested by researchers and local government offices;
3. Included in the basket of NSO and NWPC; and
4. prices regularly aired over the radio.

Other criteria which can also be considered in selecting commodities both for wholesale and retail price surveys under each commodity group are:

Crops
1. grown or produce in the province by many farmers;
2. included in the national market basket;
3. high value commodity with strong potential demand;

4. not dominant estate crops but strongly controlled commodity systems; and
5. considerable price fluctuations.

Fish

1. substantial volume of fish catch marketed by many fishermen and bought by many fish traders;
2. unprocessed fishery products; and
3. available year round.

Meat and Poultry

1. substantial volume of meat or poultry marketed by many farmers and bought by traders;
2. unprocessed meat and poultry products; and
3. with strong potential demand.

The rest of the PRMB were established based on consultations with the PASOs who in turn made consultations with local users of data. These were recently updated during the PRMB validation conducted by province.

Sample Selection

For AMNEWSS:
Respondents for wholesale and retail prices are chosen purposively in each sample market. For each commodity or item, at least five (5) samples are interviewed per collection day.

For AGMARIS:
In choosing the sample traders for each commodity under the wholesale price survey, the traders are stratified according to type of trader such as large distributor, provincial assembler, medium distributor, regional assembler/large distributor, etc.

Then, the traders are grouped into two (2) or a maximum of three (3) groups from which sample respondents are drawn. Five (5) respondents are interviewed per commodity per collection day per market.

For retail price collection, the traders are stratified according to their location or place of business in the market or collection area (inside the market, outside the market, along street A, along street B, etc). Five (5) sample respondents are interviewed per commodity per collection day per market.

Main Data Items and Variables for Operational Purposes

1. Wholesale buying price
2. Wholesale selling price
3. Retail selling price by commodity

Date of Data Collection

In AGMARIS provinces, data collection varies from market to market depending upon the operation of the markets covered.

In AMNEWSS provinces: Monday, Wednesday, Friday from 7:00 – 9:00 in the morning.

Geographical Scope

Wholesale prices: Fifty- five (55) provinces including Metro Manila

Retail prices: Eighty-one (81) provinces/cities including Metro Manila (31 for AGMARIS and 50 for AMNEWSS)

3.3.8.3 Conduct, Operations, Data Quality Control

Quality Control and Key Elements for Data Collection

To monitor and sustain quality of data collected for AGMARIS-AMNEWSS the following activities are undertaken:

1. spot-checking by Provincial Agricultural Statistics Officers (PASO);
2. consistency checking through review of entries which should correspond with the provincial retail and wholesale market baskets; and
3. monitoring of Non-sampling errors by reviewing POC forms/ questionnaires.

Quality Control for Data Processing

Manual data processing involves the review of the entries for completeness and acceptability.

Computer-based processing includes summarization of data according to provincial/regional/commodity formats, further evaluation and final tabulation, consistency checking through the review of entries.

Assessment of Data Quality

Monthly data review and validation in the Provincial Operations Centers

(POCs) and Central Office (CO) takes into consideration the following:

3. Consistency with provincial basket
4. Consistency with trend
5. Possible inputting errors
6. Accuracy of price ranges
7. Abrupt changes in price level

3.3.8.4 Statistical Report

- Statistical Handbook on Prices of Fertilizers and Pesticides
- Price Situationer of Selected Agricultural Commodities
- Updates on Palay, Rice and Corn Prices
- Updates on Fertilizer Prices

3.3.9 Agricultural Labor Survey (ALS)

3.3.9.1 Overview

Historical Background

The BAS has been conducting ALS for more than three (3) decades now. ALS covers four (4) major crops: rice, corn, coconut and sugarcane. This survey started in 1974 as a rider to the Rice and Corn Survey (RCS). Using a one-page questionnaire, RCS sub-sample respondents were interviewed for ALS. The adopted scheme did not yield an adequate number of samples that could generate acceptable data on wage rates. It was, thus, decided that quota sampling be adopted and up to 1989, this sampling procedure was used for the four (4) commodities. In 1988, the questionnaire was revised to include all the farm operations for each type of crop and this resulted in four (4) sets of questionnaire.

A Technical Working Group (TWG) on ALS was created in 1989 to assist the BAS in generating accurate, timely and useful wage rate statistics through improved survey methodology/sampling design and questionnaire. Among the modifications introduced by the TWG were the changes in the framing of questions and inclusion of women's participation in agricultural production activities. On the same year, a manual of operations for ALS was prepared.

In 1990, ALS adopted the new design for rice and corn, which employed probability sampling in the selection of its units in 38 provinces. The frame was based on the 1980 Census of Agriculture. Replicated two stage

stratified sampling design was adopted for ALS of palay and corn. Quota sampling was still maintained in the other palay and corn provinces as well as for coconut and sugarcane. In 1995, the ALS adopted the 1993 RCPS design where the frame was based on 1991 Census of Agriculture but the same sampling system was used. In 1998, quota sampling was adopted for all the crops and it is currently used for ALS. At the same time, changes in the questionnaire were made to get indications of contribution of unpaid labor to total labor.

Scope

The ALS is a national survey. Data collection covers 81 provinces for palay, 53 provinces for corn, 48 provinces for coconut and 19 provinces for sugarcane.

Objective

The main objective of the survey is to generate estimates of average wage rates of agricultural farm workers, specifically for the four (4) major crops: palay, corn, coconut and sugarcane.

Purpose

The purpose is to establish basis for computing the average wage rate in agriculture and subsequently a composite wage rate index for agriculture.

Contents

The data items generated in the survey are as follows:

1. Daily wage rate of farm workers by crop and by sex
2. Wage rate of farm workers by crop, by basis of payment and farm activity
3. Number of mandays per hectare by crop, by farm activity, source of labor and sex
4. Distribution of hired workers by terms of payment, crop and sex
5. Distribution of hired workers by farm activity, crop and sex

The ALS questionnaire has six (6) pages.

3.3.9.2 Survey Design

Survey: Agricultural Labor Survey (ALS)

Sampling Frame

For palay and corn: ALS uses the PCPS as the sampling frame which is based on the 1991 Census of Agriculture and Fisheries

Sampling Design/Statistical Unit/Selection Procedure

ALS employs quota sampling design. The statistical unit is the household that hired farm workers during the reference period. For palay and corn, samples were set at 20 for provinces identified as the major producers and 15 samples for minor provinces. For coconut and sugarcane, samples were set at 15 for both major and minor producing provinces.

Main Data Items and Variables for Operational Purposes

1. Daily wage rates of farm workers by crop, sex and region
2. Wage rates of farm workers by crop, basis of payment and region
3. Wage rates of farm workers by basis of payment and farm activity
4. Number of mandays per hectare by crop, source of labor and sex, and region
5. Number of mandays per hectare by farm activity, source of labor and sex,
6. Distribution of hired workers by terms of payment, crop and sex and region,
7. Distribution of hired workers by farm activity, crop and sex

Reference Period

The ALS for palay and corn is conducted semi-annually in January and July with reference periods July to December and January to June, respectively. The ALS for coconut and sugarcane is done annually in January with January to December as the reference period.

Date of Data Collection: First two weeks of January and July

Geographical Scope: Seventy-nine (79) provinces including Dinagat Islands and two (2) chartered cities (Davao City and Zamboanga City). The province of Batanes is excluded.

3.3.9.3 Conduct, Operations, Data Quality Control

The SOCD at the Central Office monitors and coordinates the field operations. In the field, the RASOs are responsible for the monitoring and

supervision of the survey operations in all the provinces within the region. The PASOs and APASOs serve as overall supervisors in the provinces. The POC staffs conduct the data collection or interview of respondents.

POC staff undergo pre-survey training to ensure that the procedures and concepts will be carried out correctly. During and after data collection, the field staff checks the completeness, consistency and acceptability of the data collected. The questionnaire goes through POC editing and CO editing before they are submitted for electronic data processing. Data tables are generated and are subjected to data review and validation.

3.3.9.4 Statistical Report

- Trends in Agricultural Wage Rates

3.3.10 Costs and Returns Surveys (CRS)

3.3.10.1 Overview

Historical Background

The BAS conducts socio-economic surveys related to agriculture and fisheries sectors. One of these surveys is the Costs and Returns Survey (CRS). This is done on an ad-hoc basis because the implementation of CRS is largely dependent on the availability of "external" funds

The conduct of CRS has a long history in the Bureau. It has been done as a special project by the Bureau of Agricultural Economics (BAEcon), the BAS predecessor. Under the BAS regime, numerous CRS had been conducted. During the '90s, CRS for palay and corn was conducted in January 1992 with funds coming from Comprehensive Agrarian Reform Project (CARP). In 1996, another project with three-year funding assistance from the Bureau of Agricultural Research (BAR) covered the CRS for selected high value commercial crops. CRS for hogs was conducted in 1999 and for milkfish, in 2001. To have updated information, another CRS in 2002 was conducted for garlic and onion and in 2003 for palay and corn. In 2005, CRS for palay production by seed type was implemented and covered major producing provinces. In 2006, BAS did the CRS for garlic, onion and milkfish production under the DA funding assistance. Again, with funding support from the Rice and Corn Programs of the Department of Agriculture, the BAS conducted the 2009 Survey of Costs and Returns of Palay and Corn Production

Scope

The survey covered the top producing provinces of the commodity under study.

Objectives

The conduct of CRS was generally intended to generate data on costs and returns of production in agriculture. Specifically, it aimed to:

1. establish production cost structures for the commodity;
2. analyze production costs in terms of cash, non-cash and imputed; and fixed and variable costs;
3. measure and provide indications of profitability of producing specific agricultural commodities; and
4. generate data on the average use of material and labor inputs, farmers' practices and other important socio-economic concerns.

Purpose

The purpose of the CRS was to generate survey-based estimates of farm and farm household characteristics which were useful inputs to policy and planning for the development of the sector.

Contents

The survey contained the following data items:

1. Basic characteristics of the farmer, the farm and farmer's household
2. Farm investments
3. Material inputs
4. Labor inputs
5. Other production costs
6. Production and disposition
7. Basic marketing and credit information
8. Access to support services
9. Problems related to production and marketing
10. Recommendations and future plans

The CRS questionnaires for temporary crops including palay and corn contained 10 to 13 pages and for permanent crops, from 14 to 17 pages. For CRS fishery, the questionnaire had 6 to 9 pages while CRS hog covered 12 pages.

3.3.10.2 Survey Design

Costs and Returns Survey of Palay and Corn Production

A. 2002 Survey

Sampling frame

The 2002 Costs and Returns Surveys of Palay and Corn Production covered the sub-samples of palay and corn farmers from the Palay and Corn Production Survey (PCPS). Sampling frames for palay and corn were generated separately. The results of the PCPS served as bases for frame development.

Sampling Design/Statistical Unit/Selection Procedure

A two-stage stratified sampling design was applied with barangay as the primary sampling unit and farming household as secondary sampling unit. From the PCPS, the province (domain) was categorized according to production capacity. A maximum of 10 sample barangays for major provinces and 5 sample barangays for minor provinces were chosen at random. The sample barangays were clustered and each cluster consisted of all palay/corn farmers meeting the criterion: Only palay/corn farmers who actually harvested their crop during the first half of 2002 (July round) and the second half of 2002 (December round) were included in the sampling frame.

B. 2009 Survey

Sampling frame

The survey made use of the sub-samples of the Palay and Corn Production Survey (PCPS). For the 2009 CRS-Palay July Round, the PCPS April 2009 Round data files were used to extract information on sample households' January to March 2009 harvests and April to June 2009 production forecasts based on standing crops (these information were ecosystem type, seed type and month of harvest). For the 2009 CRS-Palay November Round, the PCPS July 2009 data files were used to get information on sample households' production forecasts for July to September 2009 and production forecasts for October to November 2009 based on sample households' planting intentions.

For corn, the 2009 CRS-Corn July Round used the PCPS April 2009 Round raw data files in extracting information on sample households with corn harvest in January to March 2009 and those with expected corn production (i.e., production forecasts) in April to June 2009 based on standing crop. On

the other hand, the 2009 CRS-Corn September Round utilized two sets of raw data files, those from the PCPS April 2009 Round and those from July 2009 Round data files, to come up with information on sample households with corn harvest in January to March 2009 and April to June 2009 as well as those with expected corn production in July to September 2009 based on standing crop. For both rounds, information on farm type, seed type and month of harvest were obtained from the raw data files.

Sampling Design/Statistical Unit/Selection Procedure

The domain of the survey for palay and corn was the province. For palay, the survey was conducted in two (2) rounds in 67 palay producing provinces to account for farming operations in both wet and dry seasons. The first survey round was in July 2009 and the second round was conducted in November 2009. Data collection was focused on palay farmers with production during the reference periods.

For corn, the survey was conducted in 36 corn producing provinces in two (2) rounds to capture production seasonality and obtain better indicators of farm profitability. The first survey round was in July 2009 and the second round was conducted in September 2009. The reference period for the July 2009 survey round was the last completed harvest within January to June 2009 which covered only Luzon provinces. For the September 2009 survey round, it was the last completed harvest within January to September 2009 and covered Visayas and Mindanao provinces.

For both palay and corn, the list of farmers/agricultural operators representing the sample households with production/expected production during the reference period was provided to the Provincial Operations Centers prior to each round's field operations. The list contained the names of farmers/agricultural operators, type of ecosystem (for palay), farm type (for corn), seed type and month of harvest, as well as the geographic identification of the households. During data collection, further screening was done to confirm if those listed actually harvested palay/corn during the reference period. It will be noted that one of the bases used in the initial screening of those to be covered in the CRS was information on production forecast either based on standing crop or planting intention. As such, it would be possible that actual month of harvest happens outside the CRS reference period.

Costs and Returns Survey of Other Crops

Sampling frame

The list of top producing barangays from the top producing municipalities identified by the concerned BAS Provincial Operations Centers (POCs) served as the sampling frame for the crops under study.

Sampling Design/Statistical Unit/Selection Procedure

The CRS for other crops covered the top producing provinces which served as the domain of the survey. These provinces were identified using the BAS data on production and the CAF data on area harvested and number of trees for temporary and permanent crops, respectively. The sampling design varied from 5x5x2 to 5x5x5 to 5x4x2; these numbers indicated the number of sample municipalities, sample barangays and sample households in the selected provinces. The budget for operations was a major critical factor considered in the specification of sampling design. The sample municipalities and barangays were those identified as the top producing areas of the province. In each sample barangay, farmers engaged in the production of the concerned crop were listed using the key informants approach. Simple random sampling (SRS) was used in the drawing of samples from the list.

Costs and Returns Survey of Milkfish

Sampling frame

The 2001 Costs and Returns Survey of Milkfish Production used the sampling frame of the August 2001 Aquaculture Production Survey. In the 2006 Costs and Returns Survey of Milkfish Production, the list of milkfish producing barangays by province prepared by the concerned BAS POCs was used as the sampling frame.

Sampling Design/Statistical Unit/Selection Procedure

The province was the domain of the survey. In the 2001 Costs and Returns Survey of Milkfish Production, the selection of representative provinces considered climate types, such that two (2) top producing provinces per climate type were identified to represent the three (3) major island groupings in the country. Sample aquafarms were drawn from the list of aquaculture farms (brackishwater fishpond operators) using the simple random sampling. For the 2006 Costs and Returns Survey of Milkfish Production, a two-stage sampling design was employed with the barangay

as the primary sampling unit and the fishpond operator as the secondary unit. The barangays were drawn using systematic sampling from an ordered list of barangays with at least five (5) milkfish farm operators. Sample operators were identified using snowball approach during data collection. During the search for sample operators, a set of screening questions was applied.

Main Data Items and Variables for Operational Purposes

1. Characteristics of sample farmers - sex, age, educational attainment, farming experience, main occupation
2. Farm characteristics - farm size, tenurial status, farm investment
3. Farm practices - number of croppings, variety, culture method, farm activities, type of inputs used
4. Input usage - quantity of inputs of seeds, fertilizers, pesticides and other chemicals used, labor utilization by farm activity and source
5. Other information- disposition of produce, buyers of produce, access to credit and extension services, problems encountered, plans and recommendations
6. Average production costs and returns per hectare, per farm and per kilogram

Reference Period

The surveys covered the last completed cropping period within the reference period within the reference year.

Date of Data Collection

Data collection was conducted after the reference period of the commodity under study.

Geographical Scope

The list of selected top producing provinces varied by commodity under study.

3.3.10.3 Conduct, Operations, Data Quality Control

For the smooth implementation of the survey, a Project Management committee and implementation teams for different areas of concern were created. Before the survey operations, training of the data collectors was undertaken to ensure that the procedures and concepts will be carried

out correctly. Mock interview and dry-run exercises were part of the training. Close supervision of field enumerators was done by the POC regular staff during data collection. Spot-checking of the data collectors and back checking of their work were also done as part of the field supervision to ensure that errors or incompleteness committed in the survey operation were immediately corrected. The questionnaire was subjected to POC editing and CO editing before they were submitted for electronic processing. Data tables were generated and passed through a series of reviews.

The regular POC staff were responsible for reviewing and editing the accomplished questionnaires. These were done to check the acceptability, consistency and completeness of the data recorded in the questionnaire. The Provincial Agricultural Statistics Officers (PASOs) and Assistant Provincial Agricultural Statistics Officers (APASOs) served as overall supervisors in the provinces. They also conducted spot-checking and back-checking, review of completed and edited questionnaires before submitting to the Central Office. A report on field data collection was prepared and sent by the POC to the Central Office. The Regional Agricultural Statistics Officer (RASO) was responsible for the monitoring and supervision of the survey operations in all the provinces within the region. The Statistical Operations Coordination Division (SOCD) at the Central Office monitored and coordinated the field operations.

3.3.10.4 Statistical Report

There are CRS reports for the following commodities: palay, corn, white potato and selected upland vegetables, mango, cashew, durian, pili, onion, garlic, mongo, peanut, sweet potato, cassava, tomato, calamansi, coffee, papaya, pineapple, watermelon, ampalaya, stringbeans, eggplant, milkfish.

3.3.11 Integrated Farm Household Survey (IFHS)

3.3.11.1 Overview

Historical Background

The Bureau of Agricultural Statistics (BAS) conducted the first Farm Household Income Survey (FHIS) in January 1988 in response to the need of the Department of Agriculture for farm household income data. This was followed by another survey which was renamed as Integrated Farm Household Survey (IFHS) and covered the calendar year 1990. In consideration of the past FHIS experiences and in order to improve the quality of survey results, the BAS adopted the modular or semi-annual

approach in conducting the 1990 IFHS. The first round was done in July 1990 and covered the January to June 1990 as reference period of the survey. The second round to cover July to December 1990 was planned to be conducted in January 1991 but was postponed to July 1991 due to budgetary constraints. The latest IFHS was implemented in 2003 with financial support provided by the Bureau of Agricultural Research (BAR) of the Department of Agriculture.

Scope

The 2003 IFHS was a national survey covering farming households in 592 sample barangays across the country.

Objectives

The main objective of the survey was to generate data on the socio-economic conditions of the farming population.

Purpose

The IFHS was intended to generate benchmark data that will serve as inputs for agricultural research and development program and in the development and/or improvement of the statistical indicators for agriculture.

Contents

The survey contained the following components or modules as presented in the survey instruments:

1. Household Information
2. Farm Particulars
   Characteristics of Agricultural Holding
   Agricultural Crops
   Livestock and Poultry
   Capture Fishing and Aquaculture
   Special Agricultural Activities
   Home Processing of Agricultural Products
   Marketing of Agricultural Products
3. Inventory of Farm Investments
4. Household Income
5. Household Expenditures
6. Credit Information

The questionnaire had 42 pages.

3.3.11.2 Survey Design

Sampling Frame

The 2003 IFHS utilized different sampling frames at the barangay and household levels. At the barangay level, the list of agricultural barangays covered in the 1999 Barangay Screening Survey (BSS) served as the sampling frame. At the household level, the listing of households generated from 2000 Census of Population and Housing (CPH) of the National Statistics Office (NSO) was used as basis for drawing the samples.

The 2000 CPH listing served as the sampling frame for the IFHS despite the limitation that CPH households were not classified into farming and non-farming categories for two major considerations. First, the 2000 CPH provided the most updated lists of households by barangay. Second, budgetary constraints precluded the conduct of household screening in the selected sample barangays for the survey.

Sampling Design/Statistical Unit/Selection Procedures

The domain of the survey was the province. A two-stage stratified sampling design was adopted with the barangays as primary sampling unit and the farming household as secondary sampling unit. The number of farming households was used as the stratification variable. Primary and secondary sampling units were both drawn using simple random sampling.

In getting the number of barangays as representative of the domain (province) level, the total number of agricultural barangays in the province reported in the 1999 BSS was used to proportionately allocate the target sample size of around 600 barangays to the IFHS provinces. Considering the budgetary constraints, the total number of barangays included for small and large agricultural provinces was set at six (6) and nine (9) barangays, respectively, depending on the computed total sample size for the province, that is,

$$n^{l} = 6 \text{ if } n \leq 6 \text{ and}$$

$$n^{l} = 6 \text{ otherwise}$$

Ten (10) sample households were allocated to each sample barangay. This procedure resulted in a total sample size of 592 barangays and 5,920 households for the entire country.

A general feature of the design was the division of the primary sampling units into strata of approximately equal sizes relative to number of farming households reported in the 1999 BSS. The division of the barangays within the province and the drawing of samples were done as follows:

The barangays were arrayed in descending order based on the total number of farming households. These barangays were then divided into three (3) strata such that the cumulative total number of farming households of all the barangays in any one stratum was approximately of the same magnitude as the rest of the individual strata. Thus,

Stratum 1 barangays constituted all "large barangays"
Stratum 2 barangays constituted all "medium barangays", and
Stratum 3 barangays constituted all "small barangays"

with respect to total number of farming households.

Equal sample sizes were allocated to and drawn from the three strata, resulting in two (2) and three (3) sample barangays, respectively, per stratum depending on the sample size for the province. Selection of sample barangays was done at the BAS Central Office using simple random sampling. The generated lists of sample barangays were then submitted to NSO for the drawing of sample households and for the photocopying of corresponding barangay maps.

Drawing of sample households was made at the NSO field offices using simple random sampling procedure. The generated lists of samples were sent back to BAS Central Office for control and distribution to concerned Provincial Operations Centers (POCs).

Main Data items and Variables for Operational Purposes

1. Level, structure and/or sources of farm household income
2. Characteristics of farms/farm enterprises and the farm households
3. Access of farm households to agricultural support services
4. Farm management such as input use and cultivation practices
5. Expenditure patterns of the farm households
6. Farm and households investments
7. Other socio-economic data

Reference Period: July 2002 to June 2003

Date of Data Collection: July 2003

Geographic Scope

All provinces were covered by the survey except Batanes and Lanao del Sur.

3.3.11.3 Conduct, Operations, Data Quality Control

Prior to the survey operations, training was conducted to ensure uniform understanding of the survey concepts and procedures. The first level training was the Central Office Facilitators' Training, the second level was the training of RASOs and PASOs and the third level training involved the POC staff and CDCs. The Central Office staff provided technical back-stopping support to the field operations in selected provinces. The POC staff handled most of the field supervision work. The contractual data collectors (CDCs) undertook the data collection activity. The regular POC staff were responsible for reviewing and editing the accomplished questionnaires, conduct of spot-checking and back-checking of their work. The Provincial Agricultural Statistics Officers (PASOs) and Assistant Provincial Agricultural Statistics Officers (APASOs) acted as overall supervisors in the provinces. They also did spot-checking and back-checking, review of completed and edited questionnaires before submitting to the Central Office. POC submitted report on field data collection activity to the Central Office.

The Regional Agricultural Statistics Officers (RASOs) were responsible for the monitoring and supervision of the survey operations in all the provinces within the region. The Statistical Operations Coordination Division (SOCD) at the Central Office monitored and coordinated the field operations.

Upon submission of survey returns to the Central Office, editing, coding and encoding were done. The data passed through a Data Processing System (DPS) which was equipped with a customized editing program that filters out-of-range data items to generate an error list. The error list is a compilation of errors on specific data item that did not pass the specification. The error list was checked based on the information in the questionnaire. The correction was reflected on the data file using the CENTRY module of the Integrated Microcomputer Processing System (IMPS). Output tables were generated for review and analysis.

3.3.11.4 Statistical Report

- Socio-Economic Characteristics of Farm Households in the Philippines, 2002-2003
- Some Facts and Figures on Farm Households in the Philippines 2002-2003

- Income and Expenditures of Farm Households in the Philippines, 2002-2003
- Land Tenure and Investments of Farm Households in the Philippines, 2002-2003
- Farm Household Income in the Philippines 1990
- Income of Farm Households in the Philippines 1987

3.4 Metadata for each of the Major Administrative Registers

3.4.1 Administrative Register: FOREIGN TRADE STATISTICS

3.4.1.1 Responsible Agency: National Statistics Office

Background

The National Statistics Office or NSO (formerly National Census and Statistics Office from 1974 up to its renaming by virtue of Executive Order 121 on January 30, 1987 and used to be the Bureau of the Census and Statistics prior to its reorganization under PD 418 on March 20, 1974), is the agency that compile foreign trade statistics starting 1973.

The Philippines adopts the "General" trade system of recording foreign trade statistics and the customs frontier (not the national boundary) is used as the statistical frontier. Under this system, all goods entering any of the seaports or airports of entry of the Philippines properly cleared through customs or remaining or under customs control are considered imports, whether the goods are for direct consumption, for merchanting, for warehousing or further processing. On the other hand, all goods leaving the country which are properly cleared through the Customs are considered exports. A distinction, however is made between export for goods grown, mined or manufactured in the Philippines (domestic exports) and exports of imported goods which do not undergo physical and/or chemical transformation in the Philippines (re-exports). Since 1982, goods are considered imported/exported on the date the carrying vessel/aircraft arrives/departs at the port/airport of unloading/loading.

3.4.1.2 Description of the Contained Information

Coverage

Statistical domain and data items: Commodity at 7-digit Philippine Standard Classification Code (PSCC), FOB Value, Quantity, Gross Kilograms.

The foreign trade data relate to commerce between the Philippines and other countries by the sea or air whether for private or government use or for commercial purposes, gifts or samples. It also includes animals for the zoo, for breeding and the like. Following is the list of commodity groupings with corresponding PSCC codes.

PSCC Code	DESCRIPTION
0	Food and Live Animals
00	a. Live Animals
01	b. Meat and Meat Preparations
02	c. Dairy Products and Bird's Eggs
03	d. Fish and Fish Preparations
04	e. Cereal and Cereal Preparations
05	f. Vegetables and Fruits
06	g. Sugar and Sugar Preparations
07	h. Coffee Tea Cocoa Spices and Manufactured thereof
08	i. Feeding Stuff For Animals (Excluding Unmilled Cereals)
09	j. Miscellaneous Edible Products and Preparations
12	Tobacco and Tobacco Manufactures
2	Crude Materials
22	a. Oil Seeds and Oleaginous Fruits
23	b. Crude Rubber
272	c. Crude Fertilizer
21, 26, 29	d. Crude Animal and Vegetable Materials (Including Hides Skins and Furkins) Raw
4	Animal and Vegetable Oils and Fats
41 & 43	a. Animal and Vegetable Oils and Fats
42	b. Fixed Vegetable Oils and Fats
56	Fertilizer Manufactured
591&592	Agricultural Chemicals
7	Agricultural Machinery
721	a. Agricultural Machinery (Excluding Tractors)
722	b. Tractors
727	c. Food Processing Machines (Excluding Domestic)
745	d. Agricultural or Horticultural Sprayers Drip Irrigation System and Parts of Agricultural/Horticultural Appliances

3.4.1.3 Data Sources

Sources of information

Foreign trade statistics are compiled by the NSO from copies of import and export documents submitted by importers and exporters or their

authorized representatives to the Bureau of Customs as required by the law. Imported articles of commercial nature with dutiable value above two thousand pesos are cleared on formal import entry (Bureau of Customs Form No. 236). Those with dutiable value of two thousand pesos or less and personal and household effects, may be cleared on an informal import entry (Bureau of Customs Form No. 177) whenever duty, tax or charges are collectible. Effective 1980, imports cleared through Economic Processing Zone Authority (EPZA) Form 8102 (EPZA Import Tally) are included. From early 1996, EPZA forms were renamed as Philippine Economic Zone Authority (PEZA) forms.

The sources of export data are Export Permit (CB-ED Form No. 102R), Export Declaration (ED) with and without Foreign Exchange Proceeds (CBP 6-21-02 and CBP 6-21-04, respectively) and EPZA Export Tally (EPZA Form 8104). The first form is used by BOI-registered exporters, the second form by general exporters and the last form by exporters located inside the Export Processing Zone. The "Census Copy" (usually the triplicate copy except the Export Declaration which is quadruplicate) of these documents are collected by NSO field workers from all ports of entry and then forwarded to the central office in Manila for processing.

Effective October 1, 1991, the Revised Export Declaration was implemented which can be used by all kinds of exporters, however, in 1996 the responsibility was transferred from Central Bank (CB) to Department of Trade and Industry (DTI). On the other hand, the Customs-EPZA warehousing entry (BC Form No. 242 CEWE) form was also implemented in lieu of EPZA Form No. 8102 (Import Tally) for all EPZA-registered zone enterprises' importations effective October 14, 1991.

Commodity Classification

The commodities are classified in accordance with the 1993 Revised Philippine Standard Commodity Classification (PSCC), a classification scheme that is aligned with the United Nations Standard International Trade Classification (SITC), and the Harmonized Commodity Description and Coding System of Philippines, otherwise known as Harmonized System of the Philippines (HSP).

The 1993 PSCC is presented in five (5) levels of details: section, division, group, subgroup and item. Each commodity is identified by a unique code number. The code number of each commodity is so designed that the first digit identifies the section; the first two (2) digits, the division; the first three (3) digits, the group' the first four (4) digits, the sub-group; and the

five (5) digits, the item. It was amended in 1997 and 1999, to conform with the coverage and modification of commodity descriptions/tariff headings consistent with the Tariff and Customs Code of the Philippines (TCCP).

In July 2006, NSO adopted the 2004 PSCC in compliance with the NSCB Resolution No. 03, Series of 2005 entitled *"Approving and Adopting the 2004 PSCC"* by all concerned government agencies. This consists of 10-digit classification system with the first 6-digit level adhering to the HS code, 7th and 8th digit levels assigned to the ASEAN subheadings and commodity descriptions, and the 9th and 10th digit levels assigned to the commodities which are not in one-to-one correspondence with the ASEAN Harmonized Tariff Nomenclature (AHTN).

The following were the developments in the Philippine Standard Commodity Classification used by the NSO. The 1977 PSCC codes were used for the export and import data from 1977 to 1990. The 1977 PSCC was revised to 1989 PSCC and it was used for the year 1990 to 1993. Several revisions were made for the 1989 PSCC until the approval of the 1993 PSCC wherein the board incorporated the amendments of the SITC. The 1993 PSCC was used for the year 1999 to 2006. In 2007 to date, the government agencies were using the 2004 PSCC code.

Data Collection

Data collection by the NSO is conducted daily. The release of data on monthly exports and imports is every 40 days and 55 days after the reference month, respectively.

Data Processing

National Statistics Office (NSO)

Data processing is done both mechanically and manually.

Copies of import and export documents collected by NSO personnel from the customs houses in all ports and airports of entry in the Philippines are systematically controlled.

Collected documents are sorted by month, by port, by single or multiple commodity entries and by value. About 100 entries are assigned control

numbers and bundled together for the convenience of coders, computers and encoders. The bundles then undergo the following stages of processing:

1. Coding - process of translating each item of information to be culled into its equivalent alphabetic and/or numeric code in accordance with the commodity, country, nationality of trader, flag or registry of carrier of port classification used.
2. Code verification - process of determining the appropriateness of codes used.
3. Computation - process of converting the declared values appearing in the entries into FOB value, insurance and freight in US dollars.
4. Computation verification - process of checking the accuracy of computed data.

Quality control of coding and computation for both imports and exports is carried through sample verification. This method enables the verifier to decide after a number of entries have been verified whether to reject, continue or accept the bundle. The number and type of errors are recorded and brought to the attention of the coder or computer. Further training is given on pinpointed causes of errors of processors to improve the quality of their work.

After the necessary corrections are made, the monthly tabulations are finally produced. When all monthly tabulations for a year have been completed, the annual tabulations are then prepared.

The coverage of the annual publication is usually higher than the sum of monthly coverage, since it includes data from documents which may have arrived late for inclusion in their respective months. Separate tabulations for late entries are prepared to enable users to correct monthly preliminary figures.

Quality controls and evaluation and other key elements for data collection/compilation: Sequential computation of customs control number

Quality controls for data processing: Check FOB value by multiplying unit price and quantity.

Other key elements on data processing: Verification with other forms such as invoices, monthly report and other riders/attachments.

Other key elements on data dissemination: Monthly releases, Semi-annual & Annual special releases, Annual publication, Foreign Trade Statistics (FTS)

Bureau of Agricultural Statistics (BAS)

The Monthly and Annual Import and Export Data coming from NSO are processed using a modified Excel program to come up with the following:

1. C.I.F. computations for imports data
2. Identification of top agricultural import and export with country of origin and country of destination
3. Annual, quarterly and monthly series
4. Ranking of commodities by value
5. Agricultural trade balance

The BAS prepares and submits quarterly memorandum to the Secretary of Agriculture. An annual report is also prepared for publication.

3.4.1.4 Statistical Reports

- Annual Agricultural Foreign Trade Development Report
- Quarterly Agricultural Trade Performance Report

The Annual Agricultural Foreign Trade Development Report is released every September after the reference year.

The final data from National Statistics Office are available in May and June after the re-run of the data.

A memorandum containing the Quarterly Trade Updates is submitted to the Office of the Secretary, 70 days after the reference quarter.

Annual report is available in hard and soft copies and can be downloaded through the BAS website (http://bas.gov.ph) - downloads menu. Quarterly Trade Updates can also be downloaded through the BAS website (http://bas.gov.ph) - Price and Trade menu.

CONCLUDING NOTES

For about seven (7) years now, the BAS has been continuously putting in place an effective data management system through the CountrySTAT Philippines and along with this is the maintenance and improvement of the metadata system. The BAS has instituted various means to sustain this information system with the aim of enhancing the quality of its statistical products and services. Thus, the documentation of the processes and outputs of the agricultural statistical system of the country has become a continuing task in the Bureau.

Backed-up by the previous experiences in the updating of metadata, preparations leading to the publication of the third edition have been relatively easier. The active participation among all operating units in the Bureau has been of great help in this effort. Spearheading the updating of the metadata is the CountrySTAT Core Group which provides clearing house system for the CountrySTAT and the metadata. The Group has engaged the Bureau's Data Managers in working towards continuous improvement of the BAS' information dissemination system.

Again, we encourage our clients and stakeholders to provide comments and suggestions for further improvement of the Bureau's products and services.

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