

## **1 INTRODUCTION**

The Republic of the Philippines is making great efforts to develop agriculture at a pace necessary to meet the food requirements of the fast growing population. It has become necessary to use current agricultural statistics that will help present an accurate picture of the country's food situation. Especially important are the expected supply and consumption requirements of the people, particularly of meat products. The Commercial Livestock and Poultry Survey (CLPS) seeks to provide if but partially, such information.

The data to be obtained from this survey would not only be important from the point of view of the national economy but also from that of the farmer. The government should have available accurate information with which to anchor its major agriculture policy decisions, of which the farmers are the ultimate beneficiaries. For instance, a decision on whether to import or export livestock and poultry products has its effects not only on the national economy but also on the individual farmer. Such national decision will directly affect the raising and trading decisions of livestock and poultry raisers in the country.

### **1.1. SPECIFIC OBJECTIVES**

The survey aims to generate information on the following:

1. Number of day old chicks (DOCs) received/placed in the farm
2. Disposition of broiler production by intention and by area of destination
  - a) Sold live/dressed on farm/outside dressing plant by the growers
  - b) Hauled by integrators to be sold live/delivered to dressing plants within the province or outside the province (Metro Manila and other areas)
3. Average weight per head of broiler disposed

## **2 SAMPLING METHODOLOGY**

### **2.1 SAMPLING FRAME**

The Commercial Livestock and Poultry Survey (CLPS) utilizes a sampling frame which is distinct for each animal type. For contract growing broiler farms, the frame was taken from the 1997 Agribusiness Directory. The updated and complete listing of all commercial poultry farms by animal type contains information on maximum housing capacity of farms with at least 500 layers, or 1,000 broilers or 100 ducks. For broiler farms, contract growers and independent commercial farms are covered.

### **2.2 SAMPLING DESIGN**

The domain of the survey is the province. All farms or farm establishments in the province constitute the frame for the province.

The sampling design depends on the number of farms and the corresponding maximum housing capacities of the farms in the province. In provinces with 20 farms or below, all the farms are completely enumerated. Provinces however, with large number of farms or those with 21 or more farms/farm establishments, stratification is applied using Dalenius Hodges method with the maximum housing capacity as the stratification variable. The number of strata per province ranges from 2 to 4 depending on the population or on the heterogeneity or homogeneity of the stratification variable. Sample allocation for each stratum is done using the Neyman procedure with coefficient of variation set at 5%. A minimum of 5 samples per stratum is allocated, i.e., if the computed allocated sample size for a stratum is less than 5, 5 samples are taken from the stratum. A stratum may have less than 5 samples only if the total number of farms in that stratum is less than 5. Selection of samples from each stratum is done using simple random sampling.

The sampling procedure is as follows:

1. Ranking of the farms in ascending order according to their maximum housing capacity;
2. Delineating the stratum boundaries using Dalenius-Hodges method (Unique stratum boundaries are derived for each province);
3. Determining the total number of commercial animal farms per stratum;
4. Allocating sample size for each stratum using Neyman procedure (A five percent coefficient of variation (5% cv) is assumed and a minimum of five (5) samples are taken when  $N_h \geq 5$ ); and
5. Selecting the required number of sample farms using simple random sampling.

## 2.3 ESTIMATION PROCEDURE

### 2.3.1 Provincial Estimates

Estimate of total for each of the provinces covered in the survey is obtained differently for those provinces which are completely enumerated and those which are sampled. Provincial totals for the completely enumerated are obtained simply by summing up all the observations in the province such as

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

where:

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

$X_{p'mj}$  = observation for the  $j^{\text{th}}$  farm located in the province  $p'$  but gathered from its Metro Manila (MM) office

$X_{p'.c}$  = observation from the  $c^{\text{th}}$  farm in the province  $p'$

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

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

$X_{p'm}$  = total for all those farms located in the province  $p'$  but whose information are gathered from its MM office

$X_{p'}$  = total for the province  $p'$

It shall be noted that  $p'$  is used to designate a "complete enumeration" province.

The total for Metro Manila includes observation from all farms located in Metro Manila only. Farms located in the province outside of MM but whose data are gathered from its MM office shall be accounted in the province where the farm is actually located.

For the sampled provinces, the estimated provincial total is obtained simply by aggregating all the stratum estimates in the province. Hence, the estimate of total for the  $p^{\text{th}}$  province is given by

$$\hat{X}_p = \sum_{s=1}^H \hat{x}_{ps}$$

where:

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

$x_{psi}$  = observation from the  $i^{\text{th}}$  sample farm belonging to the  $s^{\text{th}}$  stratum in the  $p^{\text{th}}$  province

$\hat{x}_{ps}$  = unbiased estimated total of the  $s^{\text{th}}$  stratum in the  $p^{\text{th}}$  province

$N_{ps}$  = total number of farms in the  $s^{\text{th}}$  stratum of the  $p^{\text{th}}$  province

$n_{ps}$  = number of sample farms belonging to the  $s^{\text{th}}$  stratum in the  $p^{\text{th}}$  province

$H$  = number of strata in the  $p^{\text{th}}$  province

$\hat{X}_p$  = estimated total for the  $p^{\text{th}}$  province

A measure of accuracy of the estimated provincial total is given by the variance formula,

$$\text{var}(\hat{X}_p) = \sum_{s=1}^H N_{ps}^2 \text{var}(\hat{x}_{ps})$$

where:

$$\text{var}(\hat{x}_{ps}) = \left[ 1 - \frac{n_{ps}}{N_{ps}} \right] \frac{\sum_{i=1}^{n_{ps}} (x_{psi} - \hat{x}_{ps})^2}{n_{ps}(n_{ps}-1)}$$

where:

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

$\hat{\text{var}}(x_{ps})$  = estimated variance of the estimated total of the  $s^{\text{th}}$  stratum in the  $p^{\text{th}}$  province

$\hat{\text{var}}(x_p)$  = estimated variance of the estimated total for the  $p^{\text{th}}$  province

and  $x_{psi}$ ,  $n_{ps}$ ,  $N_{ps}$ ,  $H$ ,  $x_{ps}$ , and  $x_p$  are those defined in preceding pages.

### 2.3.2 Estimate for the 36 Provinces

During minor rounds, only swine and chicken are surveyed in 36 priority provinces. The estimated total for the 36 provinces is obtained by aggregating the estimates for the 36 provinces, that is,

$$\hat{X}_{36} = \sum_{p'=1}^{Lc} \hat{X}_{p'} + \sum_{p=1}^{Ls} \hat{X}_p$$

with variance estimate

$$\hat{\text{var}}(X_{36}) = \sum_{p=1}^{Ls} \hat{\text{var}}(x_p)$$

$Ls$  is the number of "sampling" provinces and  $Lc$  the number of "complete enumeration" provinces.

### 2.3.3 National Estimate

#### For Minor Rounds:

The estimated total for the whole country is given by

$$\hat{X}_{Phil} = \frac{\hat{X}_{36}}{(w)}$$

where w is the concentration ratio.

#### For Major Rounds:

The estimated total for the whole country is obtained by summing up all the provincial total/estimates

$$\hat{X}_p \text{ and } \hat{X}_p.$$

## 3 DATA COLLECTION METHODOLOGY

### 3.1 FREQUENCY OF DATA COLLECTION

Data collection for broiler farms will be done quarterly. Survey operation will be undertaken during the last two weeks of the third month of each quarter.

### 3.2 METHOD OF DATA COLLECTION

The "enterprise or farm" approach shall be employed in the survey. Data collectors will be required to go to the enterprise or farm site and interview a qualified respondent, which for the purposes of this survey is any of the following:

- 1 - Operator/Manager
- 2 - Bookkeeper/Accountant
- 3 - Authorized Representative of the Enterprise/Farm

## **4 ACCOMPLISHING THE BROILER QUESTIONNAIRE**

### **4.1. USE OF SURVEY QUESTIONNAIRE**

A pre-formatted survey questionnaire known as CLPS Form 7 is used for the quarterly survey of commercial BROILER farms.

Each sample farm shall be provided with a questionnaire to be filled up every survey round.

In cases of doubtful entries discovered in the PSW submitted to CO, the PASO shall be required to submit copies of the validated survey returns.

### **4.2. GENERAL POINTERS IN ACCOMPLISHING THE QUESTIONNAIRES**

1. Accomplish the questionnaire properly and neatly. Use soft lead pencil. Write entries legibly in clear big letters or numbers. Wrong entries must be erased neatly and not crossed out. Write the correct one on the answer space. Everything must be in its proper place.
2. Enter answers to questions in the corresponding answer spaces. Be careful in recording numerical answers particularly on the correct number of decimal places as required by the questionnaire. For pre-coded answers, encircle or indicate properly the code(s).
3. Do not leave any answer space blank, except in accordance with the "skipping instructions in the questionnaire". A blank answer space may otherwise mean that the corresponding question is none, or question is not applicable, enter a dash (-) in the corresponding answer space or draw a horizontal line along the particular item to show that there is no report for such item.
4. If an entire block has no entry, crossed out the entire block to indicate that it was not skipped.
5. Use one set of questionnaire per sample farm.

### **4.3 SPECIFIC INSTRUCTIONS IN ACCOMPLISHING THE QUESTIONNAIRE**

#### **Block A. SAMPLE IDENTIFICATION (front page of the questionnaire)**

This block of the questionnaire provides a unique identification of the sample farms which will facilitate control of forms during data collection and processing. The List of Sample Farms (masterlist) provides the information needed in accomplishing this section.

The data collector should fill up this section upon receipt of the materials or prior to his visit to the sample farm. It should be accomplished according to the following instructions:

1. On the specific spaces provided, copy from the sample masterlist and write legibly the name of the **Region, (item A1), Province (item A2), Municipality (item A3), Barangay (item A4), Name and Location of Farm (items A6 and A7), and Name of Operator.(item A8).**
2. In the corresponding boxes opposite the geographic location and other sample information including the stratum, copy the designated code from the masterlist. In the masterlist, each barangay name is preceded by a series of codes.
3. For **item A9**, encircle the appropriate respondent code.
4. For **item A10**, put a check mark on the appropriate answer box.

#### **Block B. INVENTORY**

Ask and indicate answer in the space provided the inventory/number of broilers on the farm during the reference period.

#### **Block C. DAY OLD CHICKS RECEIVED**

Ask and indicate answer in the space provided the total number of day old chicks (DOCs) broilers delivered/bought/acquired/received/placed on the farm during the reference period.

#### **Block D. DISPOSITION**

Ask and indicate answer in the spaces provided the number of broilers disposed/sold on the farm during the reference period.



## **Block E. DISPOSITION BY AREA OF DESTINATION**

### **Block E. 1. Within the Province**

#### **Line 1.a. Sold live/dressed outside DP (by grower)**

Ask and indicate answer in the space provided the number of broilers sold live or dressed outside dressing plant (DP) during the reference period. Indicate on the corresponding space the average weight per bird..

#### **Line 1.b. Hauled by integrators/viajeros**

Ask and indicate answer in the space provided the number of broilers hauled by integrators/viajeros to be sold live or to be delivered to dressing plant (DP) during the reference period. Indicate on the corresponding space the average weight per bird.

### **Block E. 2. Outside the Province**

#### **Line 2.a. Sold live by grower**

Ask and indicate answer in the space provided the number of broilers sold live to be brought to Metro Manila and other areas outside the province during the reference period. Indicate on the corresponding space the average weight per bird.

#### **Line 2.b. Hauled by integrators/viajeros**

Ask and indicate answer in the space provided the number of broilers hauled by integrators/viajeros to be brought to Metro Manila and/or delivered to dressing plants (DPs) within or outside the region during the reference period. Indicate on the corresponding space the average weight per bird

### **Block E. 3. Total Disposition**

#### **Line 1. Within the Province**

Compute the sum of broilers sold live or dressed by growers, and those that were hauled by integrators to be sold live or delivered to DP within the province.

#### **Line 2. Metro Manila**

Compute the sum of broilers sold live by growers, and those that were hauled by integrators to be sold live or delivered to Metro Manila.

#### **Line 3. Other Areas**

Compute the sum of broilers sold live by growers, and those that were hauled by integrators to be sold live in other areas within and outside the region. .

### **Average Live weight Per Head (Weighted)**

1. Compute the total weight by area of destination by multiplying the number of birds by the average live weight.
2. To compute for the average live weight (weighted), get the total weight and divide it by the total number of birds disposed (Block E.3.)

### **REMARKS:**

At the last page of the questionnaire, there are blank spaces provided for remarks. Indicate "INCREASE or DECREASE" in inventory between this quarter/semester compared to last quarter/semester and reason for change.

### **DATA COLLECTOR AND SUPERVISOR IDENTIFICATION**

#### **1. Data Collector and Editor/Supervisor/PASO**

In the corresponding line for each column, indicate the name of the data collector and editor/supervisor/PASO during each survey round.

#### **2. Date Accomplished**

In the corresponding line/column, write the date when the interview was conducted/date when the survey return was edited.

#### **3. Signature**

In the corresponding line/column, affix the signature of the data collector; editor/supervisor/PASO as an indication of confirmation in the authenticity of the data therein.

### **5. CONCEPTS AND DEFINITIONS**

The following concepts and terms are set for the purpose of this survey operation.

- a. Poultry** - is a collective term for all domestic birds rendering economic service to man; it is also used to refer to the dressed carcass or fowls. It includes chicken (native, gamefowl, layer and broiler) and ducks.
- b. Backyard Farm** - any farm raising at least one head of animal or bird and does not qualify as a commercial farm.

- c. **Commercial Farm** - defined in the survey as:
  - a. 1,000 broilers
  - b. 100 layers and 100 broilers if raised in combination
- d. **Inventory** - refers to the number of heads of live animals raised in the farm as of the reference period.
- e. **Disposition** - refers to the number of birds dressed on farm, sold live/dressed outside dressing plants, and hauled by integrators/delivered to dressing plants during the reference period.
- f. **Sold live for slaughter** - refers to animals sold purposely for meat within the reference period.
- g. **Dressed on Farm** - refers to chicken dressed for commercial or home consumption during the reference period.
- h. **Broiler** - chicken of foreign breed raised for meat purposes and usually disposed of within 35-45
- i. **Day old chicks (DOC)** - newly hatched chicks usually one to seven days old.
- j. **Contract growing** - is an agreement wherein the integrators at no cost supply feeds, vaccines, diagnostic laboratory services, and farm planning and design especially to a new applicant. Contract growers provide housing, labor, land, feeding and watering equipment, brooders, water, fuel, lighting and litter material. Growers are paid a fixed fee for every bird grown out over 35-45 day period. The contracting company picks up the birds and process them in company owned facilities.

## 6. EDITING GUIDELINES

The contents of the survey questionnaires must be edited prior to the data encoding. Editing is the checking of the acceptability of data based on the criteria : Consistency with other data items, data ranges and acceptability that will improve the quality of data items of the questionnaire. Editing should be done by Block, by data item and by page.

### A. General Instructions

1. Use red ball pen in editing the questionnaire
2. Editing aides such as manual of operations and masterlist of samples should be on hand before editing starts.

3. Check the completeness , accuracy and consistency of the answers in the spaces provided in the questionnaire.
4. Check pre-coded answers. Be careful in recording numerical answers particularly on the correct number of decimal places as required by the questionnaire.
5. Do not erase an entry in the questionnaire .To correct an erroneous entry, cross it out with a single horizontal line and write the correction above the original entry.
6. Do not leave any answer spaces blank. A blank answer space may otherwise mean that the corresponding question is not applicable. Enter a dash( - ) in the corresponding answer space or draw a horizontal line along the particular item to denote that editing was done and that information was made where entry is not necessary.

## **B. Editing Instructions**

### ***Specific Editing Instructions***

**Indicate the reference survey round for the year.** ( CHECK IF THE SURVEY ROUND AND YEAR IS CORRECT).. Example ; January 1,2010 Round , April 2010 Round , etc.

#### **BLOCK A. SAMPLE IDENTIFICATION** ( front page of the questionnaire )

**ITEMS 1 - 8.** In the specific spaces provided ,check from the masterlist of sample the **name of the Region ( item A1), Province ( item A2), Municipality (item A3), Barangay ( item A4 ), Stratum ( item A5), Name and Location of Broiler Farm (items A6, A7), Name of Operator (item A8).**

In the corresponding boxes opposite the geographic location and other sample information including the stratum , check the designated code from the masterlist , each barangay name is preceded by a series of geographic code.

**ITEM A9** - Check if the encircled code for the respondent is properly accomplished.

**ITEM A 10** - Check if mark on the appropriate Reference Quarter answer box is properly accomplished.

**BLOCK B .INVENTORY** - Check if the entry in the space provided (January 1, April 1, July 1, October 1 ) 20\_\_ is correct and the total broilers (number of heads all ages) as of the reference round is properly entered.

**BLOCK C. DAY- OLD CHICKS** – Check if the total number of DOC received or acquired or delivered on the farm is within the reference quarter.

**BLOCK D.** Check if the number of broilers in head disposed/sold monthly is within the reference quarter. The sum of the monthly broiler disposed /sold should be equal to the quarterly broiler disposed .

**NOTE:** *If the inventory of Broiler is as of January 1, 2009, the disposition should be October – December, 2008 .There is a one quarter lag for the disposition. This is the same with other quarters.*

## **BLOCK E. DISPOSITION BY AREA OF DESTINATION**

**BLOCK E.1\_ WITHIN THE PROVINCE** should be equal to line 1.a and line 1.b

*Line 1.a Sold live / Dressed outside Dressing Plant (DP )  
( by grower )*

Check the answer in the space provided the number of broilers sold live or dressed outside Dressing Plants during the reference period and its corresponding average weight/bird is properly accomplished. Average weight per bird should be recorded in two ( 2 ) decimal places.

Line 1.b Hauled by integrators/viajeros

Check the answer in the space provided the number of broilers hauled by integrators/ viajeros that were sold alive or delivered to Dressing Plants during the reference period. The sum of sold live and delivered to dressing plants should be equal to hauled by integrators= (Line 1.b.1 + line 1b.2.) Average live weight per bird should be recorded in two ( 2 ) decimal places.

### **AVERAGE LIVEWEIGHT PER HEAD (weighted)**

1. To compute the total live weight by area of destination : multiply the number of birds by the average live weight.
2. To compute the average live weight ( weighted ), get the total weight and divide by the total number of birds disposed (Block E. 3 )

To check if the average live weight is acceptable use the formula:

Ave. lwt = ( total wt / number of birds )

Total weight MT) = Number of birds X average liveweight

**BLOCK E.2 OUTSIDE THE PROVINCE** should be equal to line 2.a + line 2.b where;

*Line 2.a* – Sold live by grower is the sum of 2.a.1(Metro Manila) and 2.a.2 (other areas)

*Line 2.b* - Hauled by integrators / viajeros is the sum of 2.b.1 (delivered live to Metro Manila) and 2.b.2(delivered to dressing plant within the region and outside the region).

**BLOCK E.3 TOTAL DISPOSITION where ,**

3 .1 . Within the province is the sum of 1.a + 1.b.1+ 1.b2

3 .2. Metro Manila is the sum of ( 2.a.1 + 2.b.1)

3 .3. Other areas is the sum of (2.a.2 + 2.b.2 )

**Block E.3 should be equal to Block D ( TOTAL Disposition )**

**AFTER EDITING THE QUESTIONNAIRE, THE EDITOR / SUPERVISOR SHOULD AFFIX HIS / HER NAME AND SIGNATURE , TOGETHER WITH THE DATE WHEN QUESTIONNAIRE WAS EDITED ...**

# Annex