1. INTRODUCTION

1.1 Rationale

The changing consumption patterns and habits of Filipinos with regard to rice, corn and other basic food commodities used to be closely monitored in the past years through the conduct of various statistical inquiries. From 1970 until 1985, the National Food Authority (NFA) conducted surveys on food consumption which focused on annual per capita consumption of rice and corn. The Food and Nutrition Research Institute (FNRI) has also been undertaking a national nutrition survey every five years (1978, 1982, 1987, 1993, 2003 and 2008) although food consumption is just one of the ten modules of the survey. It has examined, in particular, the nutritional status of Filipino children, adolescents, pregnant women and lactating mothers which includes levels of food consumption and nutrient intake as well as nutrient adequacies on a mean one-day per capita basis.

In 1995, the aftermath of the rice crisis compelled the Bureau of Agricultural Statistics (BAS) in collaboration with the NFA to conduct food consumption survey to generate updated per capita consumption data for the estimation of the total food requirements of the country. The BAS again, as a special assignment from the Department of Agriculture (DA), conducted four (4) survey rounds on food consumption from 1999 to 2000 to examine the extent of rice substitution. Since then, the BAS has programmed the conduct of the food consumption survey every five years. Lack of funds, however, has always constrained the bureau from undertaking new rounds of this statistical inquiry.

In recent months, a tightening supply of basic food items such as rice, corn and pork suddenly emerged, leading to the sharp increases in their prices. This situation is quite difficult to understand considering the continuous increase in the domestic production of these agricultural commodities over the past two years. Palay production, on one hand, grew by 4.96 percent in 2006 and 5.96 percent in 2007. Its production volume of 16.24 million metric tons last year was also the highest level ever produced in the country. Corn production, on the other, expanded by 15.78 percent in 2006 and by 10.77 percent in 2007. Even the local production of pork has been on the rise and grew by 3.66 percent in 2006 and 2.72 percent in 2007.

Given the top priority concern of the DA of maintaining food security in the country, there is really the compelling need to generate updated information on the emerging food demand of Filipinos for agricultural commodities. Data on demand for food items can significantly assist in understanding consumer behavior particularly those relating to food substitution and shift in tastes and preferences. These data can thus be very important inputs for the DA in production planning and commodity prioritization. For the National Food Authority (NFA), data on food demand can serve as critical basis for its price stabilization and buffer stocking functions. With the availability of these new information sets, the NFA can therefore be more properly guided in making decisions on the appropriate volume of rice importation and its timing as well as on its domestic procurement and market injection operations.

The private sector, particularly the stakeholders in agriculture, will also immensely benefit from the results of this statistical inquiry. With new information on demand functions and elasticities of demand for agricultural commodities, they can be firmly guided in making decisions on what to produce, how much to produce and when to produce.

The above-cited potential applications of the results of this survey are the major underpinnings for its immediate implementation.

1.2 Objectives

The general objective of this statistical survey is to determine the Filipinos' current and emerging consumption patterns and habits with regard to staple commodities such as rice, corn and other basic food items.

Specifically, the survey aims to:

➢ determine the present average per capita consumption of rice, corn and other basic agricultural food items;

➢ determine the emerging consumption patterns as well as the purchasing patterns of the Filipino households;

➢ study the current shift in consumer's preference including substitution of rice with other food commodities;

➢ provide inputs for the construction of demand functions and estimation of elasticities of demand for agricultural commodities; and,

➢ analyze the relationship of demographic and socio-economic factors on the food consumption patterns.

2. SURVEY DESIGN

2.1 Coverage and Frequency of the Survey

The Survey of Food Demand for Agricultural Commodities covers 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 include Batanes and the newly-created provinces of Shariff Kabunsuan and Dinagat Islands. Among the important data elements to be gathered are the following:

- Quantity of household's food consumption, purchasing pattern and price per unit of food items and number of eaters during the past seven days;
- Quantity of rice / corn leftovers, wastage and consumption by animals;
- Extent of rice substitution; and
- Demographic characteristics of households

The reference period is the past week / past seven days. The survey will be undertaken in four rounds starting in August 2008. The succeeding surveys will be conducted in November 2008, February 2009 and May 2009, respectively. The same set of sample barangays and households will be covered in the four survey rounds.

2.2 Sampling Frame

The list of barangays counted in the 2007 Census of Population (POPCEN) serves as the sampling frame. Information on final population counts by barangay as of August 1, 2007 from the 2007 POPCEN has been released and is made part of the sampling frame. The 2007 POPCEN list is 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 are equally important information needed in the development of the sampling frame.

The income classifications of cities and municipalities are based on the Department of Finance Department Order No. 20-25 effective July 29, 2005. These income classifications are summarized in the following table.

Cities		Municipalities	
Class	Average Annual Income	Class	Average Annual Income
Special	Per Presidential Decree No. 465	First	P50 M or more
First	P300 M or more	Second	P40 M or more but less than P50 M
Second	P240 M or more but less than P300 M	Third	P 30 M or more than less than P40 M
Third	P180 M or more but less than P240 M	Fourth	P 20 M or more but less than P30 M
Fourth	P120 M or more but less than P180 M	Fifth	P10 M or more but less than P20 M
Fifth	P70 M or more but less than P120 M	Sixth	Below P10 M
Sixth	Below P70 M		

Since only total population counts are available from the 2007 POPCEN as of the time of sampling frame development, the data on average household size by barangay from the 2000 Census of Population and Housing (CPH) are used to come up with the "derived number of households as of 2007", which is in turn, a requirement in the computation of the sampling weights. Also, because of the limitation of the available information from the 2007 POPCEN, total population was assumed to be more or less the same as the household-based population. This is a valid assumption since based on 2000 CPH final population counts, only a small proportion (0.28%) of the country's total population is institutional population. Across provinces (cities in NCR), the share of institutional population in total population ranges from 0.04% in Quirino and 2.37% in Muntinlupa City. Likewise, some barangays counted in the 2007 POPCEN that have no reported population in the Census' final population counts because they were either (a) devastated by flood, (b) converted into commercial areas without living quarters, or (c) disputed by the municipality of another province, are excluded from the sampling frame.

2.3 Survey Domain and Sample Size

The domain of the survey is the province, while for NCR, the domain is the whole region. The Cities of Zamboanga and Davao are considered as separate domains.

The following sample sizes are determined for the survey

Domain	Barangays[1]	Households (10 per barangay)
81 Provinces and 2 Cities	1,328	13,280
NCR	60	600
Total	**1,388**	**13,880**

2.4 Sampling Design and Sample Selection

2.4.1 For 81 Provinces and the Cities of Zamboanga and Davao

A two-stage sampling design is used with the barangay as the primary sampling unit (PSU) and the household as the secondary sampling unit (SSU). The barangays are 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) is allocated proportionately to the number of barangays in the stratum.

In the selection of the PSUs, the barangays are arrayed based on city / municipality income class. Systematic sampling is then employed in drawing the samples. This is done to ensure that barangays in high and low-income cities/municipalities are represented in the sample. Income class is factored in the sampling process on the assumption that it is

---

[1]Sixteen (16) sample barangays per domain for 81 provinces and the cities of Zamboanga and Davao; 60 sample barangays for NCR

associated with urbanization, which is one of the determinants of food consumption patterns among households[2].

Selection of SSUs within each PSU will be 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).

Right coverage is the fashion by which the data collector looks for qualified sample households along the existing path-structure in a barangay. The right coverage requires that at the landmark-starting point, the data collector's standing position is such that his/her right shoulder points to the main entrance of the starting point. He/She then moves on along this path, choosing households along the road or passage-way. A range of alleys or "eskinitas" along or intersecting main roads on the right side shall be penetrated in a serpentine manner. Extensions/Other areas to be covered must be adjacent to the original spot and must be penetrated in likewise manner

A qualified sample household is a household with an available qualified respondent For this survey, a qualified respondent is a person who meets the following criteria:

(a) responsible adult household member
(b) knowledgeable of the household's food consumption as well as the consumption patterns of the household members
(c) willing to provide reliable information for the study

The respondent may or may not be the household head.

The following landmark-starting points will be used in the application of the right coverage procedure. The pre-assigned starting point corresponding to each sample barangay, which is any one of the following, is indicated in the list of samples.

    A - barangay hall
    B - school
    C - barangay chairperson's house
    D - church / chapel / mosque
    E - barangay secretary's house

If the pre-assigned starting point is not present in the barangay, the next in the list will be considered. If there are two schools in the barangay, say elementary and secondary schools, choose the elementary school as the starting point. Similarly, if more than one place of worship exists in the barangay, the order in which they are listed below will be followed.

    (a) Catholic church / chapel
    (b) Place of worship for Protestants and similar groups
    (c) Iglesia Ni Cristo chapel
    (d) Mosque

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[2] Global Perspectives Studies Unit, FAO, *The outlook for long-term changes in food consumption patterns: Concerns and policy options*, http://www.fao.org/es/ESD/Schmidhuberdiets.pdf.

A random start (r) is likewise pre-drawn for each sample barangay. A sampling interval (i) of **10 for urban barangays** and **5 for rural barangays** will be followed in this survey. This is likewise contained in the list of sample barangays (see Appendix A)

The right coverage procedure along with the sp, rs and i will be applied in locating the sample households.

For instance, if **sp=A**, **r=4** and **i=5,** the first potential sample household will be 4th **household** from the barangay hall. This household will be considered as sample if a **qualified respondent** is available during the data collector's first visit.

Otherwise, the data collector will locate the **nearest** household by right coverage, until he/she finds the **qualified sample household**. From this household, the data collector will proceed to the 5th **household from the previous sample** and determine if a qualified respondent is available. This process will continue until **ten (10) qualified sample households** in the barangay are covered.

An illustration of the right coverage procedure is shown in Appendix B. To keep track of the path of enumeration and the basic identification of the sample households, filling up of call sheets will be done during fieldwork.

2.4.2 For the National Capital Region (NCR)

A two-stage sampling procedure is, likewise, used with the barangay as PSU and the household as SSU. Like in the provinces, stratification is done at the PSU level. However, urban-rural classification is not considered since all the barangays are urban. Instead, the barangays are stratified by district, with all the municipalities and cities represented.

In each city/municipality, two (2) sample barangays are selected systematically from an ordered list of barangays based on barangay total population. This is done to ensure that barangays from large and small barangays in terms of population are represented in the sample.

The same procedure to be used in identifying the sample households in the provinces will be followed in the NCR. However, the sampling interval for urban barangays will be **i=10.**

2.5 Training

For any survey, training is very necessary so that all those involved in the activity will have a uniform understanding of the survey concepts and procedures. This is a step towards minimizing the errors committed during field operations. For this survey, several levels of training will be conducted. The first level will involve the regional and provincial agricultural statistics officers while the succeeding levels will involve the POC staffs who will handle most of the field supervision work, and the CDCs who will do the data gathering. A separate training of Central Office technical staff who will assist in the field operations of selected provinces will be conducted at the Central Office.

To maximize understanding of the survey concepts and procedures, field training (of POC staff and CDCs) will involve the following activities:

- Discussion of concepts and procedures;
- Dry run exercise in a non-sample barangay (this will enable the training participants to have a hands-on experience of the things discussed in the lectures);
- Clearing / discussion and addressing of issues and gray areas that came out during the dry-run exercise; and
- Discussion of consistency checks / editing procedures

2.6 Field Data Collection and Supervision

Data gathering will be undertaken by contractual data collectors (CDCs) under the supervision of the POC and ROC staff. The following will be done simultaneously during the fieldwork:

- Searching for and enumeration of qualified sample households (face-to-face interview will be used in the process); and
- Filling up of the call sheet
- Monitoring and spot-checking by field supervisors
- Backchecking of completed barangays by field supervisors

The following materials will be used:

- Questionnaires
- Enumerator's manual
- List of sample barangays
- Call sheets
- Pencil

Field supervisors will see to it that the field operation is running smoothly and within schedule. Part of their work is to observe the data collectors, make follow up, do spot checks on the interviewers, edit and back-check their work especially when incomplete or inconsistent entries are found in the data collector's work. They should always be on top of the situation and be able to address problems that may arise within their supervision areas.

2.6.1 Steps to be Followed During Field Data Collection

1st -   Fill up the identification portion of the questionnaires and call sheet before starting the enumeration work in the barangay. These information are contained in the list of samples.

2nd -   Locate the sample barangay. Coordinate with the Barangay Chairperson or any Barangay Officer if the Barangay Chairperson is not around, to explain about the survey. Indicate on the call sheet the name of the Barangay Chairperson / Official.

3rd -   Proceed to the starting point. Using right coverage, locate the **first** potential sample household which is the rth household from the starting point.

4th - Determine if a qualified respondent (may or may not be the household head) is available for interview (review definitions on page 3).

> *It is important that a good introduction about the survey is made in order to convince the respondent to supply the needed information, particularly on sensitive questions.*

5th - **Case 1**: If the respondent qualifies for the survey, interview him/her using the questionnaire. After completing the interview, indicate on the call sheet the sample household serial number (HSN). For this survey, HSN refers to the sequence of households **successfully enumerated**.

Case 2: If no qualified respondent is available, or the potential respondent refuses to provide all the needed details for the survey, politely thank him/her, indicate findings on the call sheet, then proceed to the **nearest** household still following the right path. Repeat the screening process until a **qualified sample household** is enumerated

6th - Locate the **next** potential sample household which is the **i**th household from the **previous** sample.

7th - Repeat steps 4 to 6 step until ten qualified sample households in the sample barangay are covered.

2.6.2 Accomplishing the Call Sheet

The call sheet will be used during the process of locating sample households to record the outcome of all interviews made or attempted. An accomplished call sheet also provides a quick means of counter checking areas which have been covered.

A call sheet has two main parts: the heading and the body, which will be filled up as follows:

The Heading

Province - Write the province of the sample barangay.

City / Municipality - Write the city / municipality of the sample barangay.

Barangay - Write the name of the sample barangay.

Barangay Classification - Encircle code 1 if rural and code 2 if urban.

Starting Point - This is the pre-assigned landmark in the barangay indicating where the survey starts in the barangay. Write the name of the landmark instead of using the code in the list of sample barangays.

Random Start - This is the pre-drawn number indicating which will be the first potential sample household. Write the number legibly.

Sampling Interval - This is the pre-assigned number which refers to the interval to be used in locating qualified sample households. Write the sampling interval assigned to the barangay.

Name of Barangay Chairperson - Write legibly the full name of the Barangay Chairperson.

Name of Data Collector - Write legibly the full name of the Data Collector.

Name of Supervisor - Write legibly the full name of the Field Supervisor.

The Body

Column 1 (Date) - Write the date of interview in mm/dd/yy format. For example, if the interview was done on August 12, 2008 the entry would be 08/12/08.

Column 2 (HSN) - This refers to the 2-digit serial number that will be assigned to the **qualified or successfully enumerated households** based on the order of interviews made. Thus, the first successfully enumerated household will be assigned **01**, the second, **02**, and so on.

Column 3 (Name of Household Head) - Write legibly the full name of the household head using the last name, first name format. This should match with the name of the household head entered in the questionnaire.

Column 4 (Name of Respondent) - Write legibly the full name of the actual or attempted respondent.

Column 5 (Address) - Write legibly the complete address (house number, street name, sitio/purok/zone/block) of the sample household. Otherwise, it may be described in terms of its location relative to the starting point, e.g., 3rd house from the starting point.

Column 6 (Result of Call) - This refers to the outcome of the interview. Encircle the appropriate code under this column which are described below:

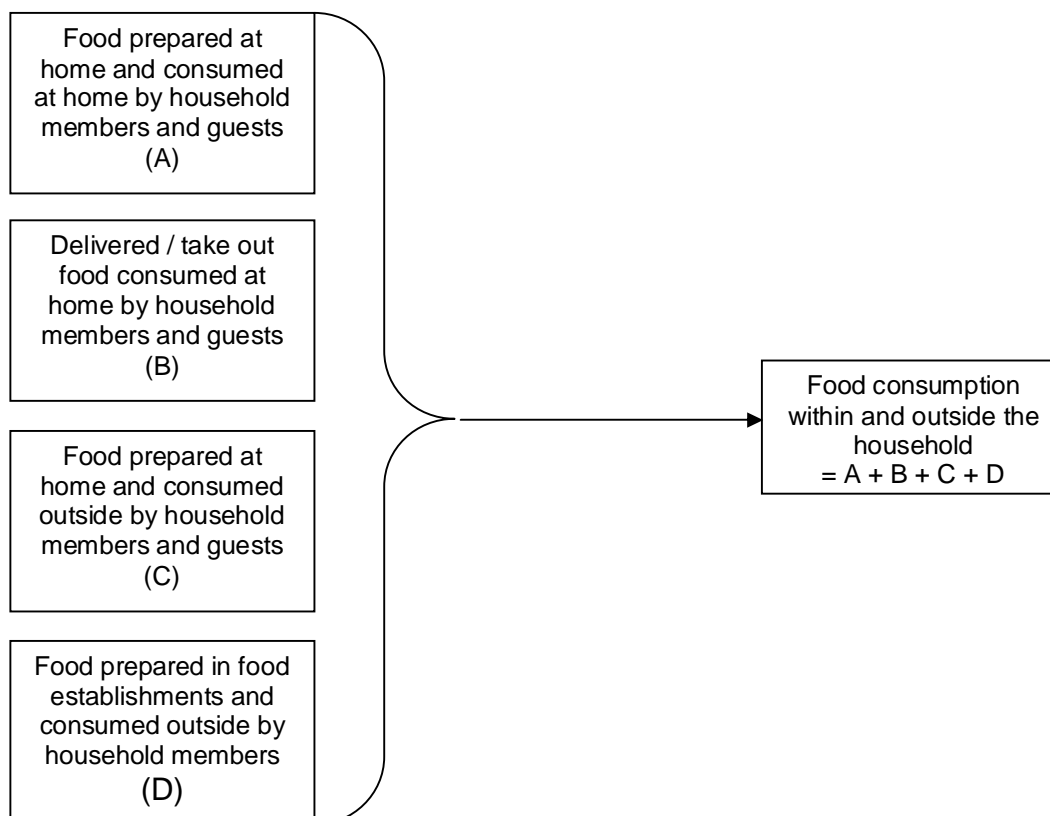|	
C	- completed interview
T	- interview terminated / partially completed
R	- respondent refused to be interviewed
NQR	- no qualified respondent (skip household)

Column 7 (Remarks) - This refers to the reasons or comments regarding the result of call. A check mark (/) should be placed in this column if the interview is completed. Possible answers in this column include out working, out on farm, went to market, etc.

For this survey, filling up of the call sheet will be done only during the first round of the survey. All households that are successfully enumerated during this round as indicated in the call sheet will be encoded in a customized template for list of sample households and will be covered in the next three rounds.

An example of an accomplished call sheet is shown in Annex C.

2.7 Estimation

Estimation of household-level food consumption (that is, within and outside the household) is based on the following framework. Total consumption is the sum of four components as illustrated in the following diagram.

The first three components can be gathered directly from the respondents through the questionnaire, while the fourth (**D**) is a derived quantity based on the assumption that the food consumption pattern within the household is more or less the same as the food consumption pattern of household members in food establishments. In formula terms, D can be expressed as follows:

$$D = \left(\frac{A + B + C}{\text{No. of computed manmeals consumed by household members and guests within the household}} \right) * \left(\text{No. of computed manmeals consumed by household members in food establishments} \right) \qquad \text{Eq. 1}$$

where

Computed manmeals = manmeals + (mansnacks / 2)   Eq. 2

Here, **manmeal** is one meal taken by one man. Thus, one person taking three meals is three manmeals. Three persons taking one meal each is also three manmeals. In relation to mansnacks, one manmeal is equivalent to two mansnacks, thus the second term in Eq. 2.

Once **D** has been derived, the household-level consumption can be computed as the sum of A, B, C and D.

Another household-level characteristic, which can be derived based on **number of manmeals / mansnacks and number of times meals / snacks are served** during the reference period is **number of eaters**. In formula terms, total number of eaters served meals / snacks during the past week can be expressed as follows:

$$
e = \frac{
\begin{pmatrix}
no.\,of\,computed \\
manmeals\,consumed \\
by\,household \\
members\,within\,the \\
household
\end{pmatrix}
+
\begin{pmatrix}
no.\,of\,computed \\
manmeals\,consumed \\
by\,household \\
members\,in\,food \\
establishment
\end{pmatrix}
}{
\begin{pmatrix}
no.\,of\,computed \\
meals\,served \\
to\,household \\
members\,within\,the \\
household\,only
\end{pmatrix}
+
\begin{pmatrix}
no.\,of\,computed \\
meals\,served \\
to\,household \\
members\,both\,within \\
the\,household\,and \\
food\,establishment
\end{pmatrix}
+
\begin{pmatrix}
no.\,of\,computed \\
meals\,served \\
to\,household \\
members\,in\,food \\
establishment \\
only
\end{pmatrix}
}
+
\frac{
\begin{pmatrix}
no.\,of\,computed \\
manmeals\,consumed \\
by\,guests\,within\,the \\
household
\end{pmatrix}
}{
\begin{pmatrix}
no.\,of\,computed \\
meals\,served \\
to\,guests\,within\,the \\
household
\end{pmatrix}
}
\qquad \text{Eq. 3}
$$

where **one meal is equivalent to two snacks.** Thus,

No. of computed meals served = No. of meals served + (No. of snacks served /2)   Eq. 4

At the provincial/domain level, estimates of total consumption and number of eaters, respectively, will be computed by direct expansion of corresponding household-level data across all samples. Per capita consumption will then be derived by dividing the estimated total consumption by the estimated total number of eaters in the province/domain.

For the other characteristics / variables, estimation will likewise be done by direct expansion of household-level characteristics across all samples.

Estimation Details

A. Stratum Estimates

The estimated total consumption of a specific commodity during the past week under stratum *h (urban, rural)* of the province, denoted by $\hat{Y}_h$, is

$$\hat{Y}_h = \frac{B_h}{b_h} \sum_{i=1}^{b_h} \frac{N_{hi}}{n_{hi}} \sum_{j=1}^{n_{hi}} c_{hij}$$

Eq. 5

where,

c_{hij} is the total consumption of a specific commodity of the jth sample household in the ith sample barangay under the hth stratum, i.e.,

$$c_{hij} = y_{hij} + \left(\frac{y_{hij}}{m_{hij} + \frac{s_{hij}}{2}} \left(m*_{hij} + \frac{s*_{hij}}{2} \right) \right)$$

Eq. 6

Note:

1. the first term y_{hij}, which is the level of consumption of a specific commodity <u>within the jth sample household</u> in the ith sample barangay under the hth stratum, refers to the sum of components A, B and C in the above framework

2. the second term of the formula $\left(\frac{y_{hij}}{m_{hij} + \frac{s_{hij}}{2}} \left(m*_{hij} + \frac{s*_{hij}}{2} \right) \right)$, which is the level

      of consumption of a specific commodity in food establishments by the members of the jth sample household in the ith sample barangay under the hth stratum, refers to component **D** in the above framework, which is defined in Eq. 1.

m_{hij} is the total count of manmeals eaten by household members and guests within the jth sample household in the ith sample barangay under the hth stratum

s_{hij} is the total count of mansnacks eaten by household members and guests within the jth sample household in the ith sample barangay under the hth stratum

$m*_{hij}$ is the total count of manmeals eaten in food establishments by members of the jth sample household in the ith sample barangay under the hth stratum

$s*_{hij}$ is the total count of mansnacks eaten in food establishments by members of the jth sample household in the ith sample barangay under the hth stratum

n_{hi} is the total number of sample households in the ith sample barangay under the hth stratum

N_{hi} is the total number of households in the ith sample barangay under the hth stratum

b_h is the total number of sample barangays under the hth stratum

B_h is the total number of barangays under the hth stratum

Meanwhile, the estimated number of eaters in stratum h, denoted by $\hat{E}_h$, is expressed as:

$\hat{E}_h$ is the estimated number of eaters based on household members and guests served meals / snacks within the household and household members served in food establishments

$$\hat{E}_h = \frac{B_h}{b_h} \sum_{i=1}^{b_h} \frac{N_{hi}}{n_{hi}} \sum_{j=1}^{n_{hi}} e_{hij}$$

Eq. 7

where,

e_{hij} is the total number of household members served meals / snacks within the household and food establishment and total number of guests served meals / snacks within the household of the jth sample household in the ith sample barangay under the hth stratum

$$e_{hij} = \frac{\left(mmh_{hij} + \left(\frac{msh_{hij}}{2}\right)\right) + \left(mmf_{hij} + \left(\frac{msf_{hij}}{2}\right)\right)}{\left(tmh_{hij} + \left(\frac{tsh_{hij}}{2}\right)\right) + \left(tmhf_{hij} + \left(\frac{tshf_{hij}}{2}\right)\right) + \left(tmf_{hij} + \left(\frac{tsf_{hij}}{2}\right)\right)} + \frac{\left(mmg_{hij} + \left(\frac{msg_{hij}}{2}\right)\right)}{\left(tmg_{hij} + \left(\frac{tsg_{hij}}{2}\right)\right)}$$

Eq. 8

mmh_{hij} is the total count of manmeals eaten by members within the jth sample household in the ith sample barangay under the hth stratum

msh_{hij} is the total count of mansnacks eaten by members within the jth sample household in the ith sample barangay under the hth stratum

mmf_{hij} is the total count of manmeals eaten in food establishments by members of the jth sample household in the ith sample barangay under the hth stratum

msf_{hij} is the total count of mansnacks eaten in food establishments by members of the jth sample household in the ith sample barangay under the hth stratum

mmg_{hij} is the total count of manmeals eaten by guests within j^{th} sample household in the ith sample barangay under the hth stratum

msg_{hij} is the total count of mansnacks eaten by guests within the jth sample household in the ith sample barangay under the hth stratum

tmh_{hij} is the number of times members of the jth sample household in the ith sample barangay under the hth stratum were served meals within the household only

tsh_{hij} is the number of times members of the jth sample household in the ith sample barangay under the hth stratum were served snacks within the household only

$tmhf_{hij}$ is the number of times members of the jth sample household in the ith sample barangay under the hth stratum were served meals both within the household and in food establishments

$tshf_{hij}$ is the number of times members of the jth sample household in the ith sample barangay under the hth stratum were served snacks both within the household and in food establishments

tmf_{hij} is the number of times members of the jth sample household in the ith sample barangay under the hth stratum were served meals in food establishments only

tsf_{hij} is the number of times members of the jth sample household in the ith sample barangay under the hth stratum were served snacks in food establishments only

tmg_{hij} is the number of times meals were served to guests within the jth sample household in the ith sample barangay under the hth stratum

tsg_{hij} is the number of times snacks were served to guests within the jth sample household in the ith sample barangay under the hth stratum

B. Provincial Estimates

The estimated total weekly consumption of a specific commodity in the province is

$$\hat{Y} = \sum_{h=1}^{2} \hat{Y}_h$$

Eq. 9

while the estimated number of eaters of a specific commodity in the province is:

$$\hat{E} = \sum_{h=1}^{2} \hat{E}_h$$

Eq. 10

Per capita consumption in the province for a survey round is then computed as:

$$\hat{PC} = \frac{\hat{Y}}{\hat{E}}$$

Eq. 11

Meanwhile, annual per capita consumption for a given province is computed as the ratio of the sum of Eq. 9 across the four survey rounds to the sum of Eq. 10 across the four survey rounds multiplied by the number of weeks in a year (52), that is,

$$\hat{P}C_{year} = 52 \left(\frac{\sum\limits_{q=1}^{4} \hat{Y}_q}{\sum\limits_{q=1}^{4} \hat{E}_q} \right) \qquad \text{Eq. 12}$$

NCR adopts the same estimation procedure except that the strata are the four districts.

3. SURVEY QUESTIONNAIRE

3.1 Major components of the questionnaire

The questionnaire on the Survey of Food Demand for Agricultural Commodities (See Appendix F) consists of five (5) pages. It has eight (8) blocks, namely:

- A. Geographic Information
- B. Sample Household Identification
- C. Household Members Particulars
- D. Household Food Consumption and Buying Pattern
  - 1 - Rice and rice-based products
  - 2 - Corn
  - 3 - Noodles
  - 4 - Bread
  - 5 - Rootcrops
  - 6 - Meat
  - 7 - Egg
  - 8 - Fish and marine products
  - 9 - Vegetables, Legumes and Condiments
  - 10 - Fruits
  - 11 - Fresh/pasteurized milk
- E. Number of Eaters
- F. Rice/Corn Leftovers, Wastage and Consumption By Animals
- G. Rice Substitution
- H. Data Collectors/Editors Particulars

3.2 General instructions

1. Fill up the questionnaire during the interview using a soft lead pencil. Use the margins and back pages for notes and computations.

2. Write entries legibly in big letters or numbers. Wrong entries must be erased neatly and not crossed out.

3. Enter answers to questions in the corresponding answer space(s) and/or box(es) on the questionnaire. Be careful in recording numeric answers. Observe strictly the unit of measure and number of decimal places required.

4. For pre-coded answers, encircle or indicate the code(s) corresponding to the answer given by the respondent. For open-ended questions, write the verbatim answer(s) in the appropriate answer space(s). If necessary, probe to get the desired information.

5. Do not leave blank any answer space. A blank may otherwise mean that the corresponding question was not asked. If the answer to a question is none or the question is not applicable, enter a dash (-) in the corresponding answer space(s) or draw a horizontal line along the particular question item to show that there is no entry for such item.

3.3 Instructions in filling up the questionnaire

BLOCK A. GEOGRAPHIC INFORMATION

This block collects information on the geographic location where the sample respondent resides.

Items 1 to 4. Name of Region, Province, City/Municipality and Barangay - Write the name of the region, province, city/municipality and the barangay on the spaces provided. Enter the corresponding codes on the boxes provided. Look for the codes on the printout of the barangays provided to you during the orientation. For item 4.1, encircle the classification of barangay. The **Urban** and **Rural** classification is also specified on the printout.

BLOCK B. SAMPLE HOUSEHOLD IDENTIFICATION

Item 1. Name of household head - Write the complete name of the household head in capital letters (**LAST NAME** then FIRST NAME)**.**

Household head - *can be the major income earner in the family and/or the one who makes decision in the household. He/She is responsible for the organization and care of the entire household and is regarded as such by the members of the household.*

Item 2. Residential address - Write the exact residence address of the sample household on the space provided.

Item 3. Name of respondent - Write the complete name of the respondent in capital letters (**LAST NAME** then FIRST NAME)**.**

Respondent - *refers to either the head of the family or any responsible member of the household, usually the spouse, who is knowledgeable in the household operation, particularly on the kind and quantity of food that the household consumes.*

Item 4. Household socio-economic classification - Encircle the appropriate code that best characterizes the household's socio-economic status. Detailed criteria to classify more objectively the socio-economic status of the households are found in **Appendix D (Criteria for Socio-Economic Classification of Households)** of the manual, particularly on the dwelling/housing category. However, the data collector can further verify by considering other criteria like the household utilities and occupation of the head of the family.

Household - refers to a person or a group of persons, generally but not necessarily bound by ties of kinship, who live together under the same roof and eat together or share in common household food.

Household are classified into four (4) groups as follows:

Code 1. **AB (Upper Class)** - The most affluent group whose homes and lifestyles exude an obvious disregard for or lack of economizing.

Code 2.   C (Middle Class) - Middle class households whose income and lifestyle reflect comfortable living and the capacity to indulge in few luxuries.

Code 3.   D (Lower Class) - Lower middle class households who have some comfort and means but basically thrive on a hand to mouth existence.

Code 4. E (Extremely Lower Class) - Who evidently face great difficulties in meeting their basic survival needs.

Detailed criteria to classify households more objectively are found in Appendix D.

BLOCK C. HOUSEHOLD MEMBERS PARTICULARS

This block contains information on the demographic profile of the household members.

Total household members - add the number of male and female members
Male - refers to the number of male household members
Female - refers to the number of female household members

Column 1.   Line Number - Household member ID number is indicated in this column. In case there are more than fifteen (15) household members, use the back page of the questionnaire. Fill up household member ID starting from number 16 and so on.

Column 2.   What is the name of household member? - Write down the name of the household member in capital letters (**FIRST NAME** only). Start with the name of the household head, followed by the spouse if any. To facilitate the recall, it is suggested to list names of the members in chronological order based on age.

Household members - are those who have been living in the household during the reference period. Members comprised the head of the household, relatives living with him and all those who are treated by him as such. They may therefore include non-family members (the family being composed of father, mother and children) such as parents, in-

laws, sisters, brothers, and other persons who share the community life for reasons of work or other considerations.

Household Membership

In determining household membership, a basic criterion is the usual place of residence or the place where the person usually resides. This may be the same or different from the place where he is found at the time of the survey. As a rule, it is a place where he usually sleeps.

The following individuals are to be included as members of the household:

1. Those whose usual place of residence is the housing unit where the household lives.

2. Family members who are overseas workers and who are away at the time of the survey are considered members of the household.

3. Those whose usual place of residence is the place where the household lives but are temporarily away at the time of the survey for any of the following reasons:

    3.1 on vacation, business/pleasure trip or studying/training somewhere in the Philippines and are expected to be back within six (6) months from the time of departure;

    3.2 on vacation, business/pleasure trip or studying/training abroad and are expected to be back within a year from the time of departure;

    3.3 working or attending school in some other place but comes home at least once a week;

    3.4 confined in hospitals for a period of not more than six (6) months at the time of enumeration except when they are confined as inmates of tuberculosis pavilions, mental hospitals, leprosaria or leper colonies, drug rehabilitation centers, etc.;

    3.5 detained in national/provincial/city/municipal jails or in military camps for a period of not more than six (6) months at the time of enumeration except when their sentence or detention is expected to exceed 6 months;

    3.6 training with the Armed Forces of the Philippines if training is not more than 6 months;

    3.7 on board coastal, inter-island or fishing vessels within Philippine territories; and

    3.8 on board ocean-going vessels but are expected to come home at least once a year.

4. Boarders/lodgers of the household or employees of household-operated businesses who do not usually go to their respective homes weekly.

5. Citizens of foreign countries, excluding members of the diplomatic missions and non-Filipino members of international organizations, but including Filipino balikbayans who

have resided or are expected to reside in the Philippines for more than a year from their arrival.

6. Persons temporarily staying with the household who have no usual place of residence or who are not certain to be enumerated elsewhere.

Take note of the following special cases:

1. Boarders are members of a household if they fall under rule #4 above. However, if there are 10 or more of such persons in the household, do not include them as members of the household with whom they board. These boarders will all be considered as institutional population and will be enumerated separately from the household.

2. A person who lodges with a household but makes arrangements for his own meals or takes his meals outside (e.g., bed-spacer) is not a member of that household. He constitutes a one-member household provided he does not usually go home to his family at least once a week.

3. Two or more families who share the same housing unit are considered one household if they have common arrangements for the preparation and consumption of food. They comprise different households if they prepare their food separately.

4. Two or more unrelated individuals who share the same housing unit also constitute one household if they have common arrangements for the preparation and consumption of food. If each of them takes care of his own meal, then each one is considered a one-member household.

5. Persons who take their meals with a household but sleep elsewhere are not considered members of that household.

Column 3. How old is the household member? (as of last birthday) - Ask the age of each household member in years and write in whole number in the space provided.

Column 4. Is the household member a … male or female? - Ask the sex or gender of each household member. Encircle code "1" if male and "2" if female.

Column 5. What is the relationship of household member to household head? - Ask the relationship of household member to household head. Enter the appropriate code. Refer to the codes (**Relationship to household head**) at the bottom of the questionnaire.

Column 6. What is highest education attained by household member? - Ask the highest education attained by the household member and write in the space provided.

Highest educational attainment - *refers to the highest grade/or educational level completed by the household member.*

Column 7. What is the member's main occupation? - Ask the main occupation of each of the household members.

   Main Occupation - refers to what the household member considers/perceives as his/her main occupation, e.g., teacher, farmer, sari-sari store operator, tricycle driver, etc.

Column 8. How much is the member's annual gross income? (in pesos) - Ask the annual gross income/ or total earnings for the last crop year period (July 2007 to June 2008) of each of the household member and write in the space provided.

Note that the information being asked for in this column does not necessarily pertain to all the members of the household listed in Column 2. Rather, it refers to all earning members of the core family as well as non-family members whose income (or at least a portion of it) form part of the household income. For purposes of this column, they shall be referred to as ***qualified family members***.

   Income from other sources (P) - refers to income from winnings of game of chance, gifts, commission, house rentals, etc, which form part of the household gross income.

   Total household income (P) - refers to the total gross income of all the members of the household and income of the household from other sources.

BLOCK D. HOUSEHOLD FOOD CONSUMPTION AND BUYING PATTERN

   This block seeks information on food consumption and buying pattern of the household for the past week.

   Past week - refers to the **past seven days** (where the time of the interview is the point of reference).

   Consumption - includes: a) food prepared at home and consumed at home by household members and guests; b) delivered/take home food from outside (bought or free) and consumed at home by the household members and guests; and c) food prepared at home and consumed outside by household members and guests.

   Household members - refer to those enumerated in Block C.

   Guests - refer to the invited or uninvited visitors. They may either be relatives, friends, workers or laborers who consumed the food prepared during the past week.

Column 1. Did your household consume any of the following commodities? (if YES check box) - Different commodity groups are listed in this column such as **rice and rice-based products, corn, noodles, bread, rootcrops, meat, egg, fish and marine products, vegetables, legumes and condiments, fruits and fresh/pasteurized milk**. Put a check in the box placed before the commodity group and encircle the number corresponds to the specific commodity consumed **in** the household in the past week. Fill up the required information in succeeding columns one item at a time.

Columns 2 - 6. How much was consumed in the household in the past week? - This refers to the **consumption** as defined above which includes the **quantity** and the **source** of commodities/food. **Food purposely cooked for pets and other animals raised by the household should be excluded.**

Column 2. How many local units? - Refers to the number of units of the particular commodity consumed in the past seven days.

Column 3. What is the name of local unit? - Ask the name of local unit of the food/commodity consumed (e.g. sack, kilogram, piece, liter, can, ganta, etc.). Ensure that the name of local unit is consistent with the form of the commodity/food. For instance, kilogram (kg) for solid/granule form and liter for commodities in liquid form.

Column 4. What is the weight of one local unit in kilogram? - Ask the equivalent weight of one local unit in kilogram. This should be in three (3) decimal places. Except for fresh/pasteurized milk that is in liter, all other commodities/food should be in kilogram.

For commodities wherein weight (in kilogram) of one local unit cannot be obtained directly from the respondent as they vary in shapes and sizes (examples of these commodities are breads and cakes), refer to the **Metric Conversion of Local Units of Selected Commodities** found in **Appendix E** of the manual. The said table can be used to determine the estimated weight of one local unit in kilogram.

Column 5. What is the total quantity in kilogram? - Refers to the total quantity in kilograms of commodity consumed by the household members and guests in the past week. It could be obtained by multiplying Column 2 and Column 4. Record in three (3) decimal places in the space provided.

Column 6. Where did your household get the food that was eaten? - Ask the source of the food/commodity eaten in the household in the past week. Encircle appropriate code/s:

> 1 - Bought
> 2 - Own Produced
> 3 - Given

Column 7. What was the price of one local unit? - This column should be ask only if the source in Column 6 is "bought" or code 1 is encircled. Ask the price per local unit of the food/commodity. Record in two (2) decimal places in the space provided.

Column 8. What is your household's usual buying frequency? - This column should be ask only if the source in Column 6 is "bought" or code 1 is encircled. Ask how often the household usually buys the commodity. Encircle appropriate code corresponding to specific commodity.

> 1 - Daily
> 2 - Weekly
> 3 - Twice/Thrice a month
> 4 - Monthly
> 5 - As need arises/ Unschedule

Item l. Rice and rice-based products

     1.1 Rice (plain) - Refers to cooked rice. Ask how much rice (in original raw form) was consumed in the past week.

     Rice-based products - refer to products made up of rice, e.g. rice cakes (puto), kutsinta, kalamay, biko, carioca, goto, champorado, etc.

Item 2. Corn - Covers corn in cob, corn grits and shelled corn. Corn in cob includes raw, boiled or roasted. Pop corn, cornick, fried corn and "binatog" fall under the "shelled corn".

Item 3. Noodles - This group of commodity include bihon, pasta, canton, misua, fresh miki and instant noodles.

Item 4. Bread - Refers to pandesal and among others are loaf bread, monay, bread rolls, cakes pies, stuffed products like siopao and chicken empanada; baked products, like donuts and bitso-bitso are included.

Item 5. Rootcrops - This group of commodity includes sweet potato (camote), irish potato, cassava, gabi, ubi and tugue.

Item 6. Meat - This includes those meat acquired as **fresh** and **cooked/prepared** in the household. Cooked meat took home from outside (bought or free) like fried, boiled or roasted 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.**

Item 7. Egg - Includes only table (fresh) egg coming either from chicken or duck. Salted eggs, century eggs and 'balot' are not included.

Item 8. Fish and marine products - This group includes commodity such as,

       8.01 - Milkfish
       8.02 - Tilapia
       8.03 - Galunggong
       8.04 to 8.06 Others (specify) - Examples are shrimps, prawns, oysters, mussels, seaweeds and other fresh fish and marine products not listed in the questionnaire but consumed in the household in the past seven days.

Item 9. Vegetables, legumes and condiments - This covers vegetables, legumes and condiments that are acquired fresh. They may be eaten/consumed fresh or cooked. Candies, preserves, juices and similar products are to be reported only if they are **cooked/prepared at home**.

Item 10. Fruits - These consist of fresh fruits that are acquired fresh or ripe. Green or unripe papaya is considered as vegetable. It holds true with jackfruit.

Item 11. Fresh/pasteurized milk - This covers fresh and pasteurized milk. Milk gone through the process of Ultra High Temperature (UHT) is not included.

BLOCK E. NUMBER OF EATERS

This block aims to capture information on the physical count of household members and guests **by type of meal in a day-by-day basis** who consumed the commodities/food reported in Block D during the past seven days.

For example: Number of Household members = 5
                        Number of guests : Saturday = 3
                                                   Sunday = 2

E. NUMBER OF EATERS

1. How many members of the household and guests were served meals in the past week?

Type of Meal	Number of member(s) served							Number of guest(s) served						
	Days of the week (specify)							Days of the week (specify)						
	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue
1. Breakfast	5	4	3	5	5	4	3							
2. Lunch	2	1	2	5	3	2	2					2		
3. Dinner	4	5	3	5	3	2	5							
4. Snacks														
4.1 Morning		1		1										
4.2 Afternoon	2		3	3	5	1	2				3			
4.3 Evening				1										

Item 1. How many members of the household and guests were served meals in the past week? - Ask the physical count of the household members and guests served.

Type of Meal - *Refers to breakfast, lunch, dinner and snacks. Snacks are further broken down into morning, afternoon and evening snacks.*

Number of Member(s) Served - *Refers to the **physical count of household members** served a specific meal whether breakfast, lunch, dinner, and snack in the past week. Physical count of household members must not exceed the total number indicated in Block C (total household members).*

Number of Household Guest(s) Served - *This refers to the **physical count of guests** served a specific meal whether breakfast, lunch, dinner, and snack in the past week.*

As defined in Block D, page 16, **guests** refer to invited or uninvited visitors (friends, relatives or laborers) who were served meals during the past seven days.

Days of the week - *This refers to the reference period, past seven days (day 1 to day 7). Write in the space provided the days of the week, e.g., **Wednesday** (day 1), **Thursday** (day 2), **Friday** (day 3), **Saturday** (day 4), **Sunday** (day 5), **Monday** (day 6) and **Tuesday** (day 7).*

Item 2. In the past week, did you and/or any member of the household eat "outside" (restaurant, fastfood, etc.)? - Encircle appropriate code whether (1) yes or (2) no. If Yes, ask Item 3, otherwise, go to Item 4.

      Eat outside - *Refers to eating in food establishment that prepares food like restaurants,hotels, fastfoods, carinderia and others.*

Item 3. How many members of the household ate "outside" and the main reason for eating outside? - Ask the **physical count** of household members who ate in *food establishments* by **type of meal** and the **main reason** for eating outside in the past seven days.

      Number of Member(s) eat outside - *Write in each cell the physical count of household members who ate outside by type of meal whether breakfast, lunch, dinner and snack.*

      Days of the week - *This refers to the reference period, past seven days (day 1 to day 7). Write in the space provided the days of the week, e.g., Wednesday (day 1), Thursday (day 2), Friday (day 3), Saturday (day 4), Sunday (day 5), Monday (day 6) and Tuesday (day 7).*

Main reason - Ask the main reason for eating outside. Encircle the appropriate code. For reasons not listed, specify in the space provided.

        1 - Economical
        2 - Time constraint
        3 - Accessibility
        4 - Social
        5 - Job/Work
        6 - Others (specify)

Economical - cheaper; reasonable price; easy on the pocket.

Time constraint - limited/no time to prepare food

Accessibility - convenience

Social - activity in which people meet each other for pleasure like special occasions (birthdays, baptismal, weddings, anniversaries, etc.).

Job/Work - is the main reason of those household members who are employed for a particular work, function or duty.

Item 4. Did you and/or any member of the household take home food from outside (bought or free) or order food for delivery in the past week? - Ask the respondent if any member of the household take home food from outside (bought or free) or order food for delivery in the past week. Encircle appropriate code whether (1) yes or (2) no. If Yes, continue, otherwise, go to Block F.

Item 5. What type of meal did they take home from outside or order for delivery? - Ask the type of meal the household member take home food from outside (bought or free) or order food for delivery in the past week. Encircle appropriate code/s.

        1 - Breakfast
        2 - Lunch
        3 - Dinner
        4 - Snacks

BLOCK F. RICE/CORN LEFTOVERS, WASTAGE AND CONSUMPTION BY ANIMALS

This block aims to determine the quantity (in kilogram) of rice/corn leftovers, wastage and consumption by animals during the past seven days.

Leftover - refers to the remaining or unconsumed portion of a meal.

Spoilage - refers to the process of decaying in foods especially when caused by bacterial or fungal infection.

Wastage - refers to losses; decrease or destruction of something by use.

In the past week, how much rice/corn… - Ask the quantity (in kilogram) of **rice/corn** leftovers, wastage and the quantity consumed by animals during the past week. Write the quantity in two (2) decimal places on the space provided.

leftovers were spoiled/wasted?   _____.__ __ kilogram
leftovers were fed to pets/animals?   _____.__ __ kilogram
was purposely cooked for pets / animals?   _____.__ __ kilogram

BLOCK G. RICE SUBSTITUTION

This block aims to capture information on rice substitution during the past week.

Item 1. In the past week, did your household substitute any food for rice in any meal? - Ask the respondent if the household substituted any food for rice in any meal in the past week. Encircle appropriate code whether (1) Yes or (2) No. If Yes, continue, otherwise, go to Block H.

Item 2. What was the main reason for substitution? - Ask the main reason why the household substituted any food for rice in a specific type of meal. Encircle appropriate code. For reasons not listed, specify in the space provided.

      1 - Rice available but cannot afford to buy
      2 - Rice not available although can afford to buy
      3 - Rice not available and cannot afford to buy
      4 - Residence far from the source of rice
      5 - Health problem/on diet
      6 - Others, (specify): _____

Item 3. What food did your household substitute for rice? Ask the respondent on the kind of food that the household members ate as substitute for rice in a specific type of meal.

Column 1. Food Item - Listed under this column are specific food items classified as rice substitute.

1 - Corn	5 - Gabi
2 - Instant noodles	6 - Irish Potato
3 - Camote	7 - Banana (saba)
4 - Cassava	8 - Bread
	9 and 10 - Others (specify)

Columns 2 to 5. Type of meal - Listed under these columns are type of meal, specifically: Breakfast (Column 2), Lunch (Column 3), Dinner (Column 4) and Snacks (Column 5). Put a check mark on the box/es parallel to the kind of commodity that the household substituted for rice on a specific meal taken.

Item 4.   Did your household mix/supplement rice with corn/other commodities? - Encircle appropriate code whether (1) Yes or (2) No. If Yes, ask why? otherwise, go to Block H.

If **Yes**, why? _____

Food mix/supplement - *refers to commodities that serve as extenders to rice. They are corn grits, banana, sweet potato, camote, gabi, irish potato and cassava which are cut into strips and mix with rice in cooking.*

BLOCK H. DATA COLLECTORS/EDITORS PARTICULARS

After the thorough review and verification of the completeness and consistency of the responses, the Contractual Data Collector (CDC) should affix his name and signature and the date of accomplishing the questionnaire. The Field Supervisor (POC Staff) and the PASO should similarly accomplish this portion.