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Philippine Households' Response to Price and Income Changes

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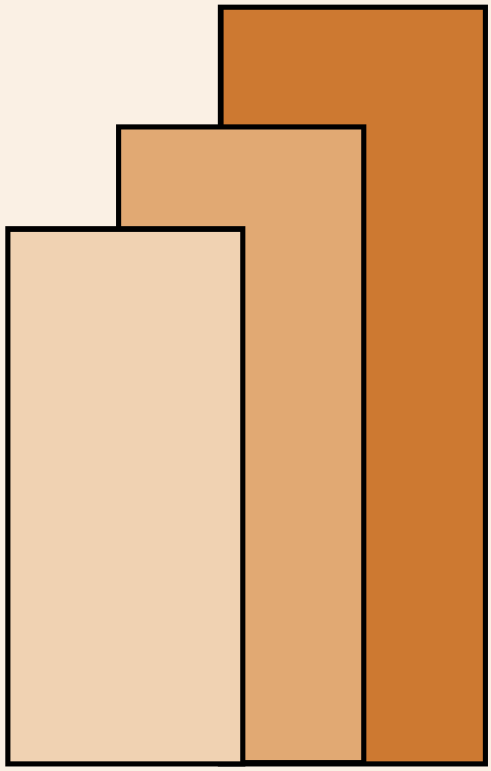

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Draft Report

Prepared for Food and Agriculture Organization

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PHILIPPINE HOUSEHOLDS' RESPONSE TO PRICE AND INCOME CHANGES

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I. INTRODUCTION

The objective of this paper is to determine the response of households, especially, agricultural households to price and income changes. The determination of income and price elasticities of demand for food and non-food items is important in framing appropriate policies affecting the macroeconomy and the agricultural sector, in particular. The main motivation for this exercise is the hypothesis that the poor households, especially small farm households stand to lose from any increase in food prices brought about by inappropriate government policies[2]. For example, propping up the retail prices of agricultural products through higher ending rates for tariffs on agricultural products, has been proposed to protect the incomes of small agricultural producers. However, small agricultural producers are also buyers of food and the high retail prices of food do not necessarily confer high income benefits to these producers. High retail food prices do not mean high farmgate prices of the corresponding agricultural product.

On the contrary, it has been suggested that policies such as protection policies that increase the price of food drive up the cost of living, ultimately hurt small farm households the most. The increase in food prices also gives rise to a clamor for an upward adjustment in wages that adversely affects the competitiveness of the country's labor- intensive, export- oriented sectors. Thus, keeping cheap food imports away from the reach of households, especially the poor households, through protectionist policies, gives undue benefit to the protected, large and organized producers, lowers the level of welfare of the poor households, and erodes the competitiveness of a labor abundant economy such as the Philippines[3].

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[1]Research Fellow, Philippine Institute for Development Studies. The assistance of Rosemarie Edilion, Christine Tang, Meanne Dizon and Anabelle Santioque is gratefully acknowledged.

[2] This in no way suggests that poor urban households are excluded from this statement. The paper simply focuses on the small farm households's response to price and income changes.

[3] This has been forcefully argued in Sarris (1995).

The argument behind this view rests on the proposition that *small households spend a relatively large portion of their income on food, and thus, any increase in the price of food products is likely to hurt them more than the richer households.* . It is, thus, important to find out the price and income elasticities of demand for food and non-food products of households that will show how price and income changes will affect them.

The paper estimated the price elasticity of demand of households classified by income class; location, i.e., rural and urban; and region to determine the different responses to price changes across households of different categories. There is a particular focus on agricultural households. The paper uses the "agricultural households" as proxy for small, farm households due to data limitations. Households have not been classified by source of income due also to data limitations. The Family and Income Expenditure Survey does not classify households by source of income.

On the second proposition that food price increases hurts the competitiveness of the labor intensive export sectors, it will be important to determine how many households derive income from wages, and how much dependent they are on wages as source of income. Sarris (1995) noted that "the cost of food which is the most significant aspect of the cost of living, influences the cost of labor, as organized labor tend to demand wage adjustments based on inflation, while the wages in the informal sector tend to be connected, albeit imperfectly with wages in the formal sectors." Conversely, making food more cheaply available increases the level of welfare of households, especially the poor households that depend totally on wage income, and minimizes the erosion of the wage competitiveness of Philippine labor.

A determination of the households income elasticities of demand will also provide important information on how expenditure patterns shift in response to income changes. A worsening of the income situation that is brought about by an increase in the general cost of food will hurt the poor households that have income inelastic demand for basic food products.

One final point that the paper seeks to establish is whether agricultural and rural households are net food buyers. A crude approach employed by the paper is to simply compare the income and expenditure shares of agricultural and rural households to find out whether those households' have some surplus after expenditures have been taken into account; or those households ct, are in deficit. If they are in a deficit situation, , i.e., they are net food buyers, then, food price increases will hurt them most.

The paper is organized into six sections. The second section provides a brief review of applied demand analysis and recent Philippine empirical work on demand functions. Section III discusses the conceptual framework, methodology, and data used in the study, and the data limitations. Section IV provides a profile of households' income and expenditure pattern to establish the stage for the empirical results of estimating the households' demand function through Deaton and Muellbauer Almost Ideal Demand System (AIDS). The section also discusses the surplus\deficit situation of households. Section V discusses the empirical results of the estimation of the demand function. The last section gives concluding remarks.

II. BRIEF REVIEW OF LITERATURE

1. Applied Demand Analysis[4]

Standard microeconomic theory teaches that starting from an utility function (or an indirect utility function) representing well-ordered preferences, utility maximization, subject to a linear budget constraint, yields a system of (Marshallian) demand equations in prices and income. Alternatively, the dual expenditure minimization problem may be set up to solve for a system of demand equations (termed Hicksian demands) as a function of prices and utility. The Hicksian demand function is simply the Marshallian demand functions if the consumer's income is "compensated" to achieve a desired level of utility.[5]

The demand equations derived from the above processes satisfy the following: they (a) add up to total expenditures; (b) are homogeneous of degree zero in prices and income; and (c) have symmetric and negative definite compensated cross-price terms. In practice, these properties may serve as restrictions on the demand functions to reduce the number of parameters to be estimated.[6] In certain cases, they may also be used instead to test how well the data conform to theory.

To further simplify the problem, most demand systems have to resort to separability assumptions of one form or another. For instance, it is often assumed that the decision of how to allocate total current expenditure into various broad categories of goods can be made separately from the decision of how to arrange the intertemporal flow of expenditure. Similarly, decisions on commodity demands are often assumed to be separable from labor supply.[7] Separability offers a convenient way of easing data and computational constraints. In actual work, the assumption can be justified by placing restrictions on preferences that allow separable decision making.

Empirical work on demand systems centers on choosing a functional form that (a) is relatively easy to handle without being too restrictive and (b) can perform well in simulations. The first practical model to be based entirely upon theory is the linear expenditure system (LES). This demand system was derived by algebraically imposing theoretical restrictions (adding up,

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[4]The discussions on separability, the LES, the Rotterdam, the translog and the AIDS models are drawn from Deaton and Muellbauer (1980b). The section on the properties of the AIDS is lifted from Deaton and Muellbauer (1980a).

[5]Varian, 1992.

[6]For n number of goods, we need to estimate n^2 price elasticities and n income elasticities.

[7]For food items, Bouis (1990) defined strong separability to mean that utility derived from the consumption of say, an inexpensive staple does not depend on the level of consumption of a more expensive, preferred staple. On the other hand, weak separability means that the marginal rate of substitution between an inexpensive and expensive staple does not depend on the level of consumption of nonstaples.

homogeneity and symmetry) on a particular functional form. As it turned out, the functional form chosen was restrictive limiting the LES' practical use.[8]

A more general approach, which allows the testing (instead of simply imposing the restrictions) of the theory is the Rotterdam model. The model starts from a first-order approximation of the demand functions themselves, then the restrictions were imposed and afterwards, tested. While the Rotterdam model is able to model the whole substitution matrix, in testing the theory, homogeneity has consistently been rejected.[9] The latter result is shared by the indirect translog model, which is approximated by a quadratic form (in the logarithms of the price to expenditure ratios) of the indirect utility function. Compared to other demand systems, the indirect translog model requires more sample information since the number of parameters to be estimated is comparatively large.[10]

A demand model that has gained considerable popularity in recent years is Deaton and Muellbauer's (1980a) Almost Ideal Demand System (AIDS). The AIDS is derived from a specific functional form for the cost function that allows exact aggregation. The budget shares of the various commodities in the demand system are linearly related to the logarithm of real total expenditure and the logarithms of relative prices. Like the Rotterdam model, the theoretical restrictions on the demand functions apply directly to the parameters.

The AIDS' attraction is that it possesses most of the properties usually thought desirable in demand analysis. Thus, it gives an arbitrary first-order approximation to any demand system; satisfies the axioms of choice exactly; aggregates perfectly over consumers without invoking parallel linear Engel curves; has a functional form which is consistent with known household-budget data; is simple to estimate, largely avoiding the need for non-linear estimation; and can be used to test the restrictions of homogeneity and symmetry through linear restrictions on fixed parameters. Although these properties are found in one or the other of the Rotterdam or translog models, neither possess all of them simultaneously.

Application of the model to British data led, just as in the two previous models, to the rejection of homogeneity. Deaton and Muellbauer traced the failure of homogeneity to, among others, the omission of conditioning variables (such as stocks, lagged independent variables or time trends) in the AIDS cost function.

The AIDS has been criticized on two grounds. First, Swamy and Binswanger (1983) pointed out that the specificity of the AIDS cost function may not permit squared income terms. This restricts the system to linear expenditure terms and does not allow interactions between expenditures and household characteristics, both of which have been shown to be empirically

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[8]Teklu, et. al. mentioned the following: (i) income elasticities are positive; (ii) all pairs of goods are net substitutes; and (iii) price elasticities are approximately proportional to expenditure elasticities.

[9]Deaton and Muellbauer (1980b) as well as Teklu, et. al. also reported that an argument against the Rotterdam model is that the demand system implies that income elasticities are all equal to unity, all own-price elasticities are equal to -1, and all cross-price elasticities are equal to 0.

[10]Teklu, et. al. (1992).

important. Second, Wohlgenant (1984) argued that the AIDS implies that demand for food always becomes more inelastic with respect to price as real income rises. A restriction which he notes, has not always been consistent with consumption behavior.

Extensions to the AIDS have been developed to address these limitations. For instance, Blundell, et. al. (1993), in assessing the importance of micro data in consumer demand analysis, used a quadratic specification for AIDS. The QUAIDS adds a squared expenditure term to the original AIDS and allows the parameters of the demand equations to vary with household characteristics and other conditioning variables. When applied to data from the British Family Expenditures Survey, the authors found that price homogeneity is not rejected by the model, while the own- and cross-price variables were strongly significant.[11]

2. A Brief Review of Recent Philippine Studies

There have been various food demand studies done using Philippine food data. Generally, these studies differ in estimation methodologies and data used as well as in levels of commodity disaggregation (Balisacan 1994; Quisumbing 1988). One of the earlier studies (Pante 1977) sought to test which among the Linear Expenditure System (LES), the Rotterdam Demand System and the Indirect Addilog System[12] perform better in actual estimation using National Accounts data on four major commodity groups - food, beverages and tobacco, durables, and miscellaneous items. Pante concluded that the LES was superior in predicting expenditures while the Rotterdam system performed better at predicting budget shares. Further, he reported substantial differences in the values of the elasticities estimated from the three models. For instance, the own-price elasticities for food were estimated at -0.16 using the LES; -2.23 using the Rotterdam model; and -0.53 using the indirect addilog system. However, Pante noted that the income elasticities for food derived from the LES and the Rotterdam models were relatively close at 0.99 and 0.88, respectively. From these results, he concluded that the choice of which functional form to use has important consequences in the estimation of income and price responses.

Quisumbing (1985), studying the impact of food policies on nutrition, estimated specific demand elasticities for four income groups using three functional forms: (i) the double-log

[11]Another study by Huang and David (1993) extended the AIDS to include the effect of urbanization. More recently, Balisacan (1994) used Blundell's formulation.

[12]Derived from the additive, indirect utility function. The demand function has the form (Teklu, 1992),

$$\ln Q_i = \ln\alpha_i b_i - (1+b_i)\ln(Y/P_i) - \ln\sum\alpha_j b_j (Y/P_j)^{b_j}, i=1,2,\ldots,m.$$

demand function; (ii) the S-system; (iii) and the Frisch method.[13] Data from the 1978 Nationwide Nutrition Survey were used and goods were classified into 16 commodity groups. Quisumbing found out that the food budget elasticities estimated from the double-log and the S-system generally exhibited the same behavior while the own-price elasticities for such food items as rice, corn, other cereals, roots and tubers, sugar and syrups and fats and oils, derived from the S-system were lower than those obtained from the double-log function. On the other hand, she reported that the Frisch method gave elasticity estimates which exhibited the same behavior across income quartiles as those from the double-log function. In general, she noted that demand for staples (rice, corn and fish) is less elastic compared to that for expensive foods. She added that across income groups, there is, in general, an inverse relationship between the absolute value of the price elasticities and income. Further, she stated that food budget elasticities decline for staples, fish and vegetables while they increase for the more expensive foods.

Another study by Quisumbing, et.al. (1988) estimated a translog expenditure system for five commodity groups, with data from the Family Income and Expenditure Survey (FIES). They also estimated a separate food demand subsystem with data from the 1978 and 1992 Food and Nutrition Research Institute surveys. The authors aggregated household expenditure categories into five groups: food, beverages and tobacco; housing, household ownership and equipment; clothing and footwear; fuel, light and water; and miscellaneous items. Regional dummies were included to compute for elasticities of the three island groups - Luzon, Visayas and Mindanao. The authors reported that all the price elasticities they computed were negative and less than one, with the exception of fuel, light and water. They also pointed out that the cross-price elasticities revealed substitutability relationships with the exception of shelter, which they found to be complementary to clothing and to fuel, light and water. They added that the demand for shelter, clothing and miscellaneous services was elastic with respect to real expenditure, while those for food and for fuel, light and water were inelastic.

Bouis (1990) applied a food characteristics demand model[14] to Philippine data to estimate food demand elasticities for urban and rural populations for an aggregation of seven food groups and one nonfood. The estimated elasticities had the expected signs (negative own-price

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$$\log q_i = a + e_{ij} \log P_i + \sum_{i \neq j} e_{ij} \log P_j + E_i \log Y.$$

[13] As discussed in Quisumbing (1985), the double-log (constant elasticity) demand function has the form, On the other hand, the S-branch system is a generalization of the LES that allows complementarity and independent relationships between the quantities demanded as well as substitutability. Finally, the Frisch method, which is based upon the assumption of additivity of the utility function, provides a procedure for obtaining price and cross-price elasticities using budget shares, income elasticities and an estimate of the flexibility of the marginal utility of money.

[14] Under the demand for characteristics framework developed by Bouis, utility is specified as a function of energy, variety and tastes of food. Using this, he showed that the entire matrix of demand elasticities can be derived from prior specification of just four elasticities, while avoiding any assumption of separability between foods (Bouis, 1995).

elasticities and positive income elasticities for most of the goods, except for corn). Bouis added that the results also showed a tendency for the higher-priced foods to have the highest income elasticities, and for these income elasticities to be higher for the rural group than for the urban group. Observed price and income changes were then applied in 1982 to the estimated elasticities, taking into account the differential impact of a given price change on urban and rural households.[15] Comparing the predicted values with actual consumption levels during the year, Bouis noted that for the observed 20 percent drop in cereal prices, the model distinguishes quite well between an increase in rice consumption for the urban group and a decrease in rice consumption for the rural group. Similarly, he reported that for "other cereals," the model correctly predicts no change for the rural group and a decrease in consumption for the urban group. He added however, that the model performs poorly in predicting a decline in corn consumption of the urban group. Further, Bouis noted that despite a substantial fall in cereal prices, urban consumers do not increase overall cereal consumption, but reveal a strong preference for non-cereal items (the more expensive calorie sources) in the diet. On the other hand, he noted that rural consumers decrease cereal consumption as cereal prices fall, not because incomes (which are assumed to rise) go down, but because of decreased subsistence cereal production, the consequent rise in cost implicit in greater dependence on food purchases in the market and higher input costs.

A more recent food demand model was estimated by Balisacan (1994), using a quadratic almost ideal demand system. Balisacan followed Blundell's two-stage budgeting framework wherein the household first makes decisions on how much of total income is to be allocated for food consumption conditional on various household characteristics. The relative amount consumed of food commodities depend on the consumption of nonfood goods (acting like demographic or locational variables) which affects both the allocation of total expenditures to food commodities as well as the marginal rate of substitution between them. Then, in the second stage, the household allocates an amount m_t^h to individual items of the food group. This paper uses a similar approach. Thus, the expenditure on good *i* by household *h* in period *t*, conditional on demographic and locational variables (z_t^h) is

$$p_{it}\, q_{it}^h = f_i(p_t, m_t^h; z_t^h)$$

where q_{it}^h represent the consumption of good *i*.

The QUAIDS is given by

$$w_{it}^h = \alpha_{it}^h + \sum_j \gamma_{ij} \ln p_{jt} + \beta_{it}^h \ln(m_t^h / P_t^h) + \lambda_{it}^h (\ln(m_t^h / P_t^h))^2$$

[15]Actual price changes were applied to the urban demand elasticities. For rural households however, Bouis argued that to the extent that these are characterized as semi-subsistence producers of cereals, the price changes that would be appropriate for evaluating demand-side substitution effects should reflect changes in the relative cost of growing cereals for subsistence consumption versus growing export crops and buying staples in the market. Hence, a 20% decline in the price of cereals was assumed to translate into a 5%increase in real cereal prices for rural residents.

where the α_i^h, β_i^h, λ_i^h parameters are allowed to vary with household characteristics and other conditioning variables thus,

$$\alpha_{it}^h = \alpha_0 + \sum_k \alpha_{ik} z_{kt}^h + \sum_k \delta_k T_{kt}$$

$$\beta_{it}^h = \beta_i + \sum_k \beta_{ik} z_{kt}^h + \sum_k \delta_k T_{kt}$$

$$\lambda_{it}^h = \lambda_i + \sum_k \lambda_{ik} z_{kt}^h + \sum_k \delta_k T_{kt}$$

where T_{kt} are purely deterministic time-dependent variables (e.g., time trends). The P is the household-specific Stone price index.[16] Homogeneity dictates that $\sum_j \gamma_{ij} = 0$, for all i. Symmetry requires that $\gamma_{ij} = \gamma_{ji}$. For integrability, $\lambda_i/\beta_i = \delta$. Further, Deaton and Muellbauer's AIDS imposes the restriction that $\lambda_i = 0$. Finally, the expenditure elasticity (η_i) annd the uncompensated elasticity of good i with respect to the price of good j (ϵ_{ij}) are defined as

$$\eta_i^h = (\beta_i^h + 2\lambda_i^h \ln m^h)/w_i^h + 1$$

$$\epsilon_{ij}^h = (\gamma_{ij}/w_i^h) - (\beta_i^h + 2\lambda_i^h \ln m^h)(w_j^h/w_i^h) - k_{ij}$$

where $k_{ij} = 1$ if $i = j$ and $k_{ij} = 0$ if $i \neq j$.

Using household data from the Family Income and Expenditure Survey from 1985 to 1991, Balisacan classified expenditures into six food items and nonfood. The objective was to look into the food consumption patterns of various population groups and determine how these are likely to change as incomes and relative prices change. Balisacan reported an income elasticity of demand for cereals is about 0.1 and that this elasticity does not drop very rapidly with the level of income. The pattern is similar for both rural and urban areas. For food price responses on the other hand, he noted that except for corn, own-price elasticities do not change much across income quartiles and between urban and rural areas in contrast to other studies

[16]Defined in Deaton and Muellbauer (1980b) as,

$$P = \sum_k w_k \log p_k.$$

which showed low-income groups to be more price sensitive.

This paper uses data from the 1991 Family Income and Expenditure Survey. It presents estimated demand elasticities of households classified on the basis of location (urban vs. rural); region; income quartiles. In addition, the demand elasticities of agricultural and rural households are discussed.

III. CONCEPTUAL FRAMEWORK, METHODOLOGY, AND DATA

1. Conceptual Framework

The conceptual framework that motivates the discussion in the paper is shown in **Figure 1.** Following Balisacan (1995), the household makes production and consumption decisions that are separable and recursive; that is, production decisions concerning the production technology, crop and input mix, input levels are made prior to consumption decisions. Households maximizes consumption goods and services given their maximized returns from production, labor and non-wage income (e.g., rental), and other fixed incomes. I assume a two-stage budgeting process among households, following some standard approach in the literature. In the first stage, income is allocated into food and non-food expenditures and in the second stage, the food expenditure is allocated among the different food groupings[17]. The impact on households of high food prices is then captured through an estimation of price and income elasticities of demand. Households that are net food buyers will be worse off in a regime of high food prices and increased cost of living, while the competitiveness of labor will be affected by pressure for upward adjustment of wages that exceed the economy's and labor's productivity.

2. Methodology

The paper uses the Almost Ideal Demand System (AIDS) to estimate food demand elasticities for households. A simulation exercise is used to determine the response of households to an increase (decrease) in prices and income. A descriptive analysis of the income and expenditure pattern of households is used to establish the surplus\deficit situation of households. For the estimation the following model was used:

$$W_i = \alpha_0 + \sum_j \beta_{ij} \log P_j + \sum \gamma_k (HHVAR)_k + \sum \rho_k (REGION)_k$$

$$+ \theta_1 \cdot (\log FOOD - \sum W_r \log P_r) + \theta_2 (\log FOOD - \sum W_r \log P_r)^2$$

[17] See Balisacan (1994) and Blundell et al. (1993).

where:

P_j = price of good $_j$

HHVAR = household variables, e.g., number of children aged 0-16; 7-14; educational attainment of household head; income decile; classification into agri/non-agri; urban/rural

REGION = regional dummies

FOOD = real food expenditure

The general price level was estimated by the Stone price index

$$\log P = \Sigma w_r \log P_r$$

The P_r that goes into the equation is indexed on an "average" province so that a number below 1.0 indicates below average prices, and so on. Thus, real expenditure is defined as how much more/less can one buy in an "average" province.

The model was estimated assuming a two-stage budgeting process: in the first stage, income is allocated into food and non-food expenditures and in the second stage the food expenditure is allocated among the different food groupings: rice and other creals, fish and meat products, fruits and vegetables, dairy products and eggs, other food items.

The following formulas were used to derive elasticities:

$$\frac{\partial lnq_i}{\partial \ln P_j} = \epsilon_{ij} = \frac{\beta_{ij}}{W_i} - (\theta_1 + 2\theta_2(\log FOOD - \Sigma w_r \log P_r)) - k_{ij}$$

where kij = { 1 if i = j
{ 0, otherwise

$$\frac{\partial \ln q_i}{\partial \ln x} = \eta_i = \frac{1}{W_i} (\theta_1 + 2\theta_2(\log FOOD - \Sigma w_r \log P_r)) + 1$$

adding up restriction:

$$\sum_j \beta_{ij} = 0 \quad \textit{for all i's}$$

The estimation procedure was ITSUR (iterated seemingly unrelated regression). To do this, the equation concerning the other food items was dropped. The restriction that $\beta_{ij} = \beta_{ji}$ was imposed.

For the simulation of the effect of price and income changes on households, the following model, in general form was used:

$$q_i = q_i (P_1, P_2, P_3, P_4, P_5, X) \quad \text{where } X = FOOD$$

$$dq_i = \sum_{j=1}^{5} \frac{\partial q_i}{\partial P_j} dP_j + \frac{\partial q_i}{\partial x} dx$$

$$\frac{dq_i}{q_i} = \sum_{j=1}^{5} \frac{\partial q_i}{\partial P_j} \cdot \frac{dP_j}{q_i} + \frac{\partial q_i}{\partial x} \cdot \frac{dx}{q_i}$$

$$\frac{dq_i}{q_i} = \sum_{j=1}^{5} \frac{\partial q_i}{\partial P_j} \cdot \frac{dP_j}{q_i} \cdot \frac{P_j}{P_j} + \frac{\partial q_i}{\partial x} \cdot \frac{dx}{q_i} \cdot \frac{x}{x}$$

$$\frac{dq_i}{q_i} = \sum_{j=1}^{5} \left(\frac{\partial q_i}{\partial P_j} \cdot \frac{dP_j}{q_i}\right) \left(\frac{dP_j}{P_j}\right) + \left(\frac{\partial q_i}{\partial x} \cdot \frac{x}{q_i}\right) \left(\frac{dx}{x}\right)$$

$$\frac{dq_i}{q_i} = \sum_{j=1}^{5} \epsilon_{ij} \left(\frac{dP_j}{P_j}\right) + \eta_i \left(\frac{dx}{x}\right)$$

The following simulations were done: (a) a 10% increase in prices; and (b) a 10% decrease in prices accompanied by a 5% increase in income to indicate in a general way how households respond to price and income changes.

3. The Data and Data Limitations

3.1 Data Description

This study uses the 1991 Family and Income Expenditures Survey (FIES) of the National Statistics Office (NSO). The sampling design used in the 1991 FIES is a "stratified two-stage cluster sampling design" wherein the urban and rural centers of the provinces (as well as areas with 150,000 or more population) were first chosen as domains. Within each domain, a pre-determined number of barangays was selected in the first stage. Within each selected barangay, a pre-determined number of households was then selected in the second stage. The sample design resulted in a uniform sampling fraction of 1:400 for urban areas and 1:600 for rural areas (except for special areas which were assigned different sampling fractions).[18]

The data covers 24,789 households in 15 regions (including the Cordillera Administrative Region (CAR) and the Autonomous Region of Muslim Mindanao (ARMM)). The data were collected by the NSO via two separate interviews of the sample households (using the same questionnaire), one covering the first semester of 1991 and the other covering the second semester. The results of the two surveys were then combined to get annual data. Because the two interviews were conducted one month after the end of the period covered, the data collected are subject to recall lapse. Hence, income and expenditures tend to be underestimated. (Quisumbing, et.al., 1988)

For purposes of this study, income and expenditure data are classified by region, location (urbanity) and income class. The primary focus is on agricultural households which make up 32% of the total households surveyed. Household expenditures were aggregated into six groups: (1) cereals; (2) meat products; (3) fruits and vegetables; (4) dairy products; (5) other food items; and (6) non-food. Income, on the other hand, was categorized as: (1) wage income from agricultural and non-agricultural activities; (2) entrepreneurial income from crop farming, livestock and poultry, fishing and others; and (3) other income sources.

In the estimation, the following limitations were imposed:

1. The unit of observation of the price data is the province. The data set does not provide a distinction between prices in the urban and rural areas;

2. Prices of cities outside Metro Manila are assumed equal to provincial prices;

3. The extreme 1% of sample households, i.e., the outliers based on per capita household expenditure; which meant cut-offs of ₱1,858.20 and ₱70,920, were excluded;.

[18]Refer to the NSO's 1991 Family Income and Expenditures Survey: Final Report for a discussion of the survey design.

4. All households whose heads are 15 to 65 years old were included in the estimation;

5. The final total number of households included in the analysis is 21,648;

6. The classification of households into agricultural and non-agricultural was based on the National Statistics Office (NSO) classification; and

7. A household was classified as farm households if it has non-zero earnings from crop farming and gardening (EACFG); otherwise, that household was classified as non-farm household

3.2. Sample Household Distribution

Of the 21,648 households in the sample, 60% are situated in urban areas while 40% are in rural areas **(Table 1)**. The three regions with the largest sample households are the NCR (16%), Region IV (14%) and Region III (11%). These are followed by Regions VI (8%), XI (7.2%) and VII (7%). Households from Regions XIII and XIV comprise only 2% and 3%, respectively of the total households sampled.

Households are more evenly distributed by income decile. *Further disaggregating the income groups by region (Table 2), only NCR, Regions III, IV and XIII have more sample households in the higher income groups.* For seven of the regions (V, VII, VIII, IX, X, XI, XII), more of the sample households belong to the lower income decile. **Table 3** shows that for the first income decile, more households are located in Regions VII, VIII, X and XI while for the second income decile, there are more households in Regions IV, V, VI, VII and X. On the other hand, for the 8th, 9th and 10th income deciles, the sample households in only three regions (the NCR, Regions III and IV) already take up more than 50% of the sample households.

Of the sample households, 7,006 or 32% of total households are classified as agricultural households. The majority of these (68%) are rural households while urban agricultural households comprise 32% of the sample agricultural households. Regions IV, VI and XI each has 11% of the sample agricultural households while Regions III, V and X each has 8%. The NCR has the smallest sample agricultural households among the regions. *Many of the sample agricultural households belong to the lower income groups.* Seventy-seven percent (77%) of the sample agricultural households fall under the first five deciles, with only 1% of the sample left in the 10th decile. Such skewed distribution of agricultural households is seen in both urban and rural areas **(Table 4)**.

Table 5 shows the distribution of households by income decile for each region. *Except for the NCR, most of the agricultural households in the regions belong to the lower income classes.* In particular, more than 50% of the agricultural households in Regions VII, VIII, IX and X belong to the lowest three deciles. In the case of Region VII, 58% of the agricultural households belong to the first two deciles. Less than 5% of agricultural households belong to the

9th and 10th income deciles in most of the regions, with the exception of the NCR, Regions III and XIII.

The overall picture drawn for the sample agricultural households is as follows: (a) the bulk belong to the lower income class; (b) most are located in the rural areas; and (c) Regions IV, VI and XI have the most number of sample agricultural households while the NCR and Region XIII have the least number of sample agricultural households.

IV. THE PROFILE OF HOUSEHOLDS

1. Household Characteristics

In all the regions, the majority of the households are single families (as contrasted to extended families which include relatives living under the same roof) **(Table 6).** The NCR has the largest proportion of extended families to total households at 32% while the figure for Region XIV is only 3%. The number of extended families is proportionately higher in the urban (22%) than in the rural areas (13%) **(Table 7).** Moreover, there are more extended families among the higher income households compared to those in the lower-income households **(Table 8).** For instance, the proportion of extended families in the first decile is only 7%, as compared to 30% and 42% for the 9th and 10th deciles, respectively.

By income decile, households in the upper income groups on the average have proportionately lesser children below seven years old while those in the lower income groups tend to have a higher proportion of children below seven years. On the other hand, the proportion of members 25 years and older is relatively higher for the first (54%) and 10th (47%) deciles than for the middle income groups (5th and 6th deciles).

The employment profile does not vary significantly across regions. Region XIV has the smallest proportion of employed family members at 26% as compared to the 31% to 37% range of the other regions. A greater percentage of household heads' wives are unemployed relative to that of employed wives. In each of nine regions (II, III, V, VIII, IX, X, XI, XII and XIV), more than 50% of the wives are unemployed (the proportion in Region XIV is 77%). On the other hand, the proportion of employed wives ranges from a low of 13% for Region XIV to a high of 39% for Region XIII. The number of unemployed wives is proportionately higher in the rural (56%) than in the urban (47%) areas. Moreover, the same figure is higher for the lower income groups than for the high income groups. In particular, more than 50% of the wives in the first seven deciles are unemployed as compared to the 38% and 34% unemployment ratios for the 9th and 10th deciles.

2. Household Income

A bigger proportion of urban households derive their main source of income from wages (57%) while for rural households, the number of households depending on entrepreneurial income is proportionately higher (52%) **(Table 9).** In particular, 52% of urban households source their income from wages from non-agricultural activities while another 28% depend on entrepreneurial income. Only 8% of the households rely on crop farming to earn a living. *In contrast, 32% of rural agricultural households engage in crop farming as their main source of livelihood. Another 24% are non-agricultural wage earners while 12% are agricultural wage earners.*

The regions where wage income is the main source of livelihood of households are the NCR, Regions III, IV, VI, VII and X **(Table 10).** On the other hand, families in Regions I, II, V, VIII, IX, XI, XII, XIII and XIV depend more on entrepreneurial income, especially for Region XIV where 83% of the households source their income from entrepreneurial activities. *Wage income for all the regions are primarily derived from non-agricultural activities while entrepreneurial income are principally sourced from crop farming (except for the NCR, Regions III, IV and VII). The highest proportion of households into crop farming are in Region XIV (55%), XII (39%) and II (36%).*

The proportion of households relying on wage income is larger for high-income households relative to low-income households **(Table 11).** Hence, starting from the sixth decile, more than 50% of the households rely on wages for their income. Also, while these wages are derived from non-agricultural activities, in the lower deciles (1st and 2nd), a bigger proportion of the households get their wages from agricultural activities. *Among the lower income groups, more families source their incomes from entrepreneurial activities, particularly crop farming. The proportion of households into crop farming is higher in the lower-income than in the higher-income groups, with the proportion declining as income rises.* Thus, starting from 39% for the first decile, the proportion of households relying on farm income declines to 22% for the fifth decile, then to 2% for the 10th decile.

Agricultural Households Income. By definition, agricultural households refer to those households whose main sources of income are derived from agricultural activities - whether wage income from agriculture or entrepreneurial income from crop farming, livestock and poultry, etc. The income sources of agricultural households differ greatly from those of the entire sample households. *In most of the regions, agricultural households are primarily engaged in entrepreneurial activities, particulary crop farming* **(Table 12).** Region XIV has the largest proportion of agricultural households engaged in entrepreneurial activities - 74% in crop farming and 25% in fishing. Crop farming is the main source of livelihood of more than 50% of the agricultural households in nine of the regions (Regions I, II, III, V, IX, XI, XII, XIII, XIV). On the other hand, agricultural wage income is the most important income source for households in the NCR and Region VI and the second most important income source for agricultural households in many of the regions (Regions II, III, IV, V, VII, X and XII).

A higher proportion of rural agricultural households rely on entrepreneurial income relative to urban agricultural households, whereas a higher percentage of urban agricultural households depend on wage income (30% for urban households vs. 21% for rural households) **(Table 13).** Among entrepreneurial income, more households depend on farm income in both urban and rural areas. But the proportion of households that source their income from crop farming is higher for rural (56%) as compared to urban (45%) areas. Further, a bigger proportion (larger than 60%) of rural agricultural households in the upper income classes (7th to 9th deciles) derive their income principally from crop farming **(Table 14).** Still, the majority of rural agricultural households in each income decile rely on crop farming for their income in contrast to urban agricultural households where only the first, fourth and tenth income deciles have more than 50% of the families into crop farming. In the case of wage income, some 40% of urban agricultural households in the 8th and 9th deciles earn their income from agricultural wages. Except for the fourth decile, families that derive their income from wages are proportionately smaller for all income groups in the rural areas than in the urban areas.

For the rural areas, crop farming as the main income source is most prevalent among agricultural households in Regions XII, XIII and XIV with some ¾ of them engaged in it **(Table 15).** For the urban areas on the other hand, the largest proportions of agricultural households into crop farming are found in Regions II and XIV at 78% and 71%, respectivly. Only in these two regions is the proportion of agricultural families deriving their income from crop farming higher in the urban areas than in the rural areas. For a significant share of the households in the urban areas of the NCR (52%), Regions VI (58%) and X (42%) as well as in the rural section of Region VI (43%), wage income from agriculture is the primary source of income.

A large proportion of agricultural households in all the income groups depend on entrepreneurial income, primarily income from crop farming **(Table 16).** In particular, more than 50% of agricultural households in all the income groups depend on farm income. The highest proportions of agricultural households into crop farming are in the first (56%) and the tenth (55%) deciles while the lowest proportion belongs in the eighth decile (50%). On the other hand, a significant share of the agricultural households in all the deciles derives their income from agricultural wages. Wage income from agriculture is the main source of livelihood for 30% of the households in the eighth decile. For the other income deciles, between 20% and 27% of the households source their income from agricultural wages.

3. Household Expenditure

Except in the NCR, the average household in all the regions spend proportionately more on food than on non-food commodities **(Table 17).** Households in Regions V, VIII and IX allot more than 60% of their expenditures on food while in the NCR, the proportion of food expenditures is a lower 49%. *The share of food to total expenditures is higher for rural (61%) than for urban households (54%). In terms of income deciles, the conventional view that lower-income households spend a bigger share of their budget on food than higher-income households is borne out by the data.* Hence, food expenditure share goes from 67% for the first income decile to 61% for the fifth decile and 41% for the tenth decile. Further, among households in the

first decile, those in Region XIV allot the biggest expenditure share on food (73%) as compared to the NCR's 58% food share, the lowest among the regions **(Table 18)**. For households in the tenth decile on the other hand, only those in the NCR, Regions III, IV, IX and XIII spend more than 40% of their total budget on food.

Among the food items, cereals take up the biggest share of total food expenditures. Expenditure on cereals is proportionately higher in the rural (40%) as compared to the urban areas (30%). The smallest food expenditure share of cereals is 21% for the average household in the NCR while the largest is 42% in Region XII. Except for the NCR and Region III, the average household in every region allot more than 30% of food expenditures on cereals. For Regions VI, VIII, X, XII and XIV, the food expenditure share of cereals is more than 40%. The observed trend of declining food share as income rises is also true for the food expenditure share of cereals. The food expenditure share of cereals for the average household in the first income decile is 47% while that for the average family in the 10th decile is only 21%.

In addition, among households in the first decile, those in Regions VI, X, XII and XIII spend on the average a higher percentage on cereals than households in the other regions **(Table 19)**. The food expenditure share of cereals of the average household in the first income decile in Region XIII is 51%, higher than its total expenditures on non-food commodities. Starting from the sixth decile up, most of the households in the regions (except Region VII, XII and XIV) allocate on the average less than 40% of food expenditures on cereals. For households in the 10th decile, the average share of cereals in food expenditures ranges from 18% (NCR) to 29% (Region XIV).

Expenditure on meat as well as of dairy products is proportionately higher in the urban than in the rural areas. The average urban household allots 14% and 8% of food expenditures on meat and dairy goods, respectively, while the corresponding shares for rural households are 9% and 5% for meat and dairy products, respectively. By region, the share of meat products in food expenditures is highest for households in the NCR, Regions I, II, III, IV and XIII and lowest for families in Region XIV. On the other hand, the share of dairy goods in food expenditures for each region commonly lies within the 5% to 7% range. Nonetheless, it is proportionately higher in the NCR and Region III and lower in Region XIV. Across income groups, the percentages of food expenditure on meat and dairy products is higher for the higher-income classes, and vice versa. Starting from the fifth income decile, the proportion of meat to total food expenditures is at least 10% and reaches up to 21% for the average family in the 10th decile. The average household in the first decile allots only 6% of food expenditures on meat. Similarly for dairy goods, its share in total food expenditures is 4% for the average family in the first decile, 6% in the fifth decile and 9% in the 10th decile.

There is very little difference in the food expenditure shares of fruits and vegetables of urban relative to rural households, or across income groups. Expenditures on fruits and vegetables commonly take up from 7% to 10% of the average household's expenditure on food in all the regions, with households in Region II spending a proportionately higher share (12%) on these items.

Agricultural Household Expenditure. Agricultural households' expenditure patterns are generally similarly to the combined household's expenditure pattern in that: (a) *expenditures on food items form the largest share of total expenditures; (b) the share of food in total expenditures is higher for the lower-income households; and (c) among food items, expenditure on cereals is proportionately higher than other food groups.*

Table 20 *reveals that agricultural households spend proportionately more on food commodities than all the household combined.* Expenditure on food makes up the bulk of agricultural household expenditure in all the regions, with the NCR having the lowest average share at 59% and Region VIII having the highest average share at 69%. Also, while the expenditure share of food is higher for rural households than for urban households, the difference is not as big (64% for rural families vs. 62% for urban families).

The share of cereals in total food expenditures is also higher for agricultural households relative to all the households combined. Cereals take up a significant share of household food expenditures in all the regions (mostly in the 40+% food share). The average expenditure share of cereals ranges from 25% for the NCR (lowest) to 48% for Region VII (highest). On the other hand, the share of cereals is highest for households belonging to the lowest 70% of the income strata, higher even than the residual term, "other food."

For fruits and vegetables, the expenditure pattern of agricultural households is somewhat similar to that of all the households combined. Hence, most of the regions allot some 10% of food expenditures on these goods, with Region VII spending the least and Region II the most (7% and 13%, respectively in terms of food share) on them. However, rural agricultural households spend proportionately more on fruits and vegetables relative to urban agricultural households. Further, while the data do not exhibit any clear pattern, it would seem that households belonging to the middle income group (fourth to sixth income deciles) spend proportionately less on fruits and vegetables.

The expenditure patterns of agricultural households on meat and dairy products across income deciles are similar to those of all households combined. Hence, food budget shares of meat and dairy products of agricultural households are highest for the higest income class and lowest for the lowest income class. Also, urban agricultural households allocate a bigger percentage of food expenditures on meat and dairy products than urban agricultural households. Similarly, expenditures on meat and dairy products are proportionately higher in certain regions than in others. For instance, the NCR, Regions I, II, III and XIII spend more than 11% (16% for the NCR) of their food budget on meat , Regions IV to XII allocate from 5% to 8% on these items, while Region XIV allot less than 4% to this food group. On the other hand, expenditure on dairy products is proportionately higher for the NCR and Region III.

4. Surplus and Deficit Households

Of the 21,648 sample households, after netting out total expenditure from total household income, it is found out that 15,920 are surplus households, meaning, they have surplus income

while 5,728 are deficit househholds, i.e., having negative income. *The latter group are net food buyers.* In general, the household characteristics of surplus- and deficit-income households differ as follows (**Table 21**): (a) compared to surplus households, a higher percentage of households with negative income are single families; (b) families whose expenditures exceed income have more children below 15 years old; (c) deficit households have a lower proportion of employed members; and (d) a higher percentage of deficit households' heads' wives are unemployed compared to households with surplus income.

Households with negative income allot a higher share of their expenditures on food relative to families with surplus income (**Table 22**). Of the former group's total expenditures, 58% is spent on food compared to the latter group's 56%. Among food groups, deficit households tend to spend proportionately more on cereals and fruits and vegetables. On the other hand, surplus households spend proportionately more on meat and fish, dairy products and other food items.

Almost two-fifths of the families with surplus income belong to the higher income groups (**Table 23**). On the other hand, *more than 40% of deficit households belong to the lower deciles (first to third).* Except for households in the first income decile, the majority of households in the other income groups are net savers (**Table 24**). Some 55% of households in the first decile are deficit units compared to 25% in the sixth decile and 9% in the tenth decile.

Relative to deficit households, a bigger percentage of households with surplus income is located in the urban areas (61% for surplus units vs. 57% for deficit units) (**Table 25**). By urbanity, proportionately more urban households have surplus income (75%) compared rural households (71%) (**Table 26**).

Table 27 shows that *crop farming is the major income source of many of the deficit households, especially in Region XII (51%) and in ARMM (50%).* The next most important source of income, (particularly for 70% of the households in the NCR and 44% of those in Region IV) is wages from non-agricultural activities. Wages from agricultural activities is a relative significant income source only for households in Region VI.

In contrast, the most significant income source for surplus households is wages from non-agricultural activities (**Table 28**). Crop farming is similarly an important income source for surplus households, albeit much less so compared to deficit households. Only in the NCR and the ARMM is the proportion of households with crop farming as their main source of livelihood, larger for surplus households than for deficit households. Moreover, in Regions VI and X, more households derive their main income from agricultural wages than from crop farming.

The majority of households in the urban centers source their main income from non-agricultural wages whereas in the rural areas, more households derive their primary income from crop farming than from agricultural or non-agricultural wages. In particular, for urban deficit households, 46% source their main income from non-agricultural wages, with only 11% engaged in crop farming (**Table 29**). In contrast, crop farming constitutes the main source of livelihood

of 39% of the rural deficit households as compared to 15% from non-agricultural wages and 13% from agricultural wages.

For surplus households, the percentage of non-agricultural wage earners in the urban areas is even higher (53%) than that for deficit households (**Table 30**). Conversely, the number of rural surplus households that derive their main income source from crop farming is proportionately lower than that for rural deficit households.

Among deficit households, the percentage of those primarily into crop farming declines with increasing income (**Table 31**). Thus, while 45% of the households in the first decile are into crop farming, the figure declines to 22% in the fifth decile, 4% in the eighth decile and 0.9% in the tenth decile. Likewise, the percentage of households whose main source of livelihood is income from agricultural wages is higher in the lower deciles (first to fourth). On the other hand, the majority of deficit households in the upper income brackets source their main income from non-agricultural wages.

Similarly, the percentage of surplus households whose main income comes from crop farming declines with increasing incomes (**Table 32**). However, compared to deficit households, the percentage is lower for surplus households in the lower income groups (first to fifth decile) and higher in the higher income groups (sixth to tenth). Wage earning families are proportionately higher among surplus households (especially in the lower deciles) than among deficit households.

Rural Households. Rural households mostly belong to the lowest 50% income group. Of the 8,623 rural families in the sample, 6,134 are surplus units and 2,489 are deficit units (**Table 33**). Households in the first decile have the highest number of deficit units while those in the tenth decile have the least. The number of surplus households on the other hand, is highest in the fourth decile and declines as income rises.

A significant number of rural households (2,798) are primarily into crop farming for their income (**Table 34**). Most of these are in the lower 50% income group with only 191 families belonging to the eighth to tenth deciles. Likewise, there is a large number (2,039) of rural households whose main income comes from non-agricultural wages. These households mostly belong to the upper-mid-income groups (sixth to eighth). On the other hand, agricultural wages are most important for some 1,066 families, the majority of whom belongs to the lower income deciles.

Agricultural Households. There are 7,007 agricultural households in the sample, the majority (65%) of which belong to the lowest 40% income class (**Table 35**). *Of these agricultural households, an estimated 4,659 households are surplus units while 2,348 are deficit units.* The number of deficit units is highest in the first income decile and declines as income rises. On the other hand, the number of surplus households is highest in the second decile and falls with increasing income. Only in the first decile does deficit agricultural households outnumber surplus agricultural households (609 vs. 447).

Among agricultural households, crop farming is the main source of livelihood of 3,693 families, more than 50% of the sample agricultural households **(Table 36).** Another 1,691 households derive their main income from agricultural wages. Of those primarily engaged in crop farming, more than 50% (or 1,851 families) belong to the lower income deciles (first to third) while only 7% belong to the eighth to tenth deciles.

Looking at average total income vs. average total expenditures, the figures show that for agricultural households, average total expenditures of the lowest 20% income class exceed their average total income. For households in the first income decile, total income falls short of total expenditures by an average of ₱1,875 while for those in the second income group, expenditures exceed income by ₱99 on the average. The rest of the income groups on the average, enjoys savings of differing magnitudes - from an average of ₱1,165 for households belonging to the third decile to an average of ₱76,700 for households in the 10th income decile.

Farm Households. Farm households, defined as those with non-zero income from crop farming, number 6,899 **(Table 37).** *Of this number, 4,653 have surplus income while 2,246 have negative income.* Except for the first decile, surplus households outnumber deficit units with the ratio of surplus to deficit households generally increasing with rising income. Thus, for the second decile, the ratio is one deficit household for every 1.3 surplus household while for the tenth decile, the ratio is 1:9.5. In contrast, in the first decile, deficit units exceed surplus units by more than 50% (558 vs. 362).

Of the 6,899 households with nonzero crop farming income, some 56% (or 3,855) rely mainly on crop farming for their income **(Table 38).** Further, the number of households whose major income source is crop farming is larger for the low-income groups than for the higher deciles. Fewer farm households (1,001) depend mainly on non-agricultural wages and fewer still on agricultural wages (457).

For households belonging to the first and second income deciles, total expenditures exceed total income by an average of ₱2,310 and ₱335, respectively. Average household income for the higher income deciles range from ₱523 for the third decile to ₱71,929 for the tenth decile. Compared to agricultural households, farm households generally have smaller savings. Moreover, for the lowest 20% income group, the deficits incurred by farm households are bigger than those of agricultural households in general.

Overall, the income and expenditures survey data as shown in from **Tables 33 - 38** confirm the unequal distribution of income in the country. The tables show a large number of families in the low income groups, particularly those engaged in crop farming, having negative income and a relatively smaller number of households in the high end of the income scale enjoying large savings.

V. EMPIRICAL RESULTS: HOUSEHOLDS RESPONSE TO PRICE AND INCOME CHANGES

The estimated food demand systems. The homogeneity and symmetry conditions suggested by demand theory have been imposed on the estimated demand systems. **Table 39** shows the estimation results for all households. (The results for the other household groups are presented in **Annex 1 - 7.**)

The statistical results show that the coefficients have the expected signs and reasonable magnitudes. The goodness of fit as measured by R^2 is relatively high. In particular, results for the food expenditure function shows that the food price terms are negative and significant, indicating that food prices affect food expenditure negatively. On the other hand, nonfood prices exert a positive influence on food expenditures as given by the estimation results. The total expenditure term and its square are also significant. Except for AGE (age of household head), all the other household characteristics variables plus all the regional variables are highly significant. These indicate that food expenditures of households vary across regions and among families with different household characteristics. Likewise, food expenditure of households classifed as agricultural, differ from that of nonagricultural households. However, household location by urbanity does not seem to affect food expenditure as shown by the T-statistic of the DURBAN variable.

Parameter estimates for the food demand system are presented in **Table 40.** Except for meat prices, the rest of the own-price terms are not significantly different from zero. For instance, demand for cereals is dependent on the prices of other food groups but not on its own price. On the other hand, demands for fruits and vegetables and dairy products are dependent on the prices of cereals but not on other price variables. Hence, many of the price terms in the demand system are not significant. On the other hand, except in the fruits and vegetable equation, the expenditure terms are all significant. With a few exceptions, the household characteristics variables, regional variables, dummies for urbanity and agriculture are all significant. The AGE and DURBAN variables are insignificant only in the fruits and vegetables equation while the REG variables are mostly significant.

Price and expenditure elasticities. **Table 41** summarizes the price elasticities of demand for various food items computed at the sample mean based on the estimated parameters reported in **Table 40.** All the computed uncompensated own price elasticities of demand have the correct negative signs. The demand for cereals is inelastic with respect to its own price for the various household groups. The elasticity figures are 0.87 for all households; 0.89 for urban households; 0.90 for farm households and deficit households. It is unit elastic (1.00) for rural households, at varying household sizes; agricultural households; and surplus households.

The demand for fruits and vegetables is unit elastic for all types of households with respect to own price, except for urban households; rural households in general; and all households where it is price inelastic. In general, the demand for meat and fish is elastic with respect to own price for the all households group, the urban households, and the surplus

households, and inelastic for the rest. On the other hand, demand for dairy products is (own) price elastic for all household groups.

The cross price elasticities of fruits and vegetables, meat and fish and dairy products, irrespective of household group, with cereals is positive. This means that cereals are used as substitutes for these other food groups that may be out of the reach of household budgets. In contrast, the prices of cereals negatively affect the demand for fruits and vegetables (except for agricultural households), meat and fish and other foods. Hence, these food groups are complements to cereals. On the other hand, dairy products serve as substitutes to cereals for the following household groups: all households, agricultural households, farm households and surplus households.

For the other food groups, the figures show the following:

(a) meat and fish are complements of fruits and vegetables, dairy products and other foods;

(b) for agricultural households, meat and fish are substitutes of cereals;

(c) fruits and vegetables are substitutes to meat and fish for all household groups;

(d) dairy products and other food are complements to meat and fish for all household groups;

(e) dairy products are complements to fruits and vegetables while other foods are substitutes for the various household groups;

(f) fruits and vegetables are complements to dairy products for all the households groups except rural and farm households; and

(g) other foods are complements to dairy products except for all the household groups except urban households.

Income (proxied by total expenditures) elasticities for all the food groups are positive indicating that these are normal goods. The demand for cereals is income inelastic for all the household groups with the computed elasticities ranging between 0.63 and 1.00. In contrast, demands for the other food groups (with the exception of fruits and vegetables for surplus households) are income elastic for all the household groups. Thus, a percentage change in income produces a small percentage change in demand for cereals but exerts a large response on demand for meat and fish as well as for dairy products.

Among the various household groups, income elasticity of demand of 0.63 for cereals is lowest for rural households with a family size of three and non-agricultural households. Surplus households have an income elasticity of demand for cereals of 0.70; deficit households have 0.65. On the other hand, income elasticity of demand for meat and fish is highest for deficit or dissaving households followed by rural households then agricultural households. As well, income elasticity of demand for dairy products is highest among agricultural and farm households.

Food expenditure elasticities. The food expenditure elasticity indicates the percentage change in expenditure on a given food commodity given a percentage change in per capita expenditure. **Table 42** shows that all the food commodities have positive food expenditure elasticities. Relatively higher food expenditure elasticities were computed for meat and fish, and dairy products for all households, and for the different types of households. Given an increase in per capita expenditure, the households will prefer the higher end food commodities to the basic foods such as cereals.

Simulation results. **Tables 43 and 44** show the results of the simulation exercises to indicate the change in commodity demand for cereals, fruits, vegetables, meat fish, dairy and eggs, and other food items for a given change in prices and income. **Table 43** shows the impact of an increase of 10% in prices for all commodities. **Table 44** shows the impact of a decrease of 10% in prices coupled with an increase of 5% in household income. In the first scenario of a price increase, all households will decrease their demand for cereals by at least 5%; fruits and vegetables by 10%; meat and fish by 13% and dairy and eggs by 11%. This seems to be the general pattern in the change in commodity demand as a result of a price increase in food commodities. The second case shows a large increase in commodity demands by all households of various types following a decline in food prices and an increase in income.

VI. SUMMING UP

The paper showed the income and expenditure pattern of Philippine households, and the response to price and income changes. More specifically, the paper indicated that the low-income households, especially the deficit rural and agricultural households will be most adversely affected by an increase in food prices. The deficit households are net food buyers and they allot a higher share of their expenditure on food, especially on cereals, fruits and vegetables, relative to surplus households.

The demand for the basic foods, i.e. cereals that are mainly the source of calorie and protein by the lower income households, is price inelastic as predicted by demand theory. Since the other food items are relatively more expensive than the basic foods, and thus, less accessible to the lower income households, there is little room for substitution. Thus, the low-income, poor households bear the biggest burden of food price increases that will be brought about by constraining food imports through protectionist policies favoring a few big producers.

Conversely, a regime of low food prices will benefit the poor, deficit households the most. This finding supports a previous result of Orbeta (1994) who showed that a reduction in tariffs across the board will favor the low income groups because of an increase in the consumption of the basic foods, that means increasing calorie intake by 0.17% and protein intake by 0.16%. In contrast, the calorie intake of the rich income groups will increase by only 0.12% and the protein intake by 0.14% because they are not as dependent as the low income groups on the consumption of cereals (rice and corn).

Wage income is a significant source of income for many households. The significance of wage income as a source of income arises from the growth of the economy and the changing structure of the goods markets, with the increasing share of industry and manufacturing sectors in producing output; and of the labor markets, with formal, wage-based employment following suit. The change in the production structure is accompanied by rapid urbanization. The most significant source of income for the urban households is wages. The increase in food prices that will be brought about protectionist policies will increase the cost of living and will lead to a demand for an upward adjustment in wages. The wage increases that exceed the productivity of the economy and the labor sector will create an inflationary bias and erode the competitiveness of the labor-intensive, export-oriented sectors.

Figure 1. Household Income and Expenditure Allocation

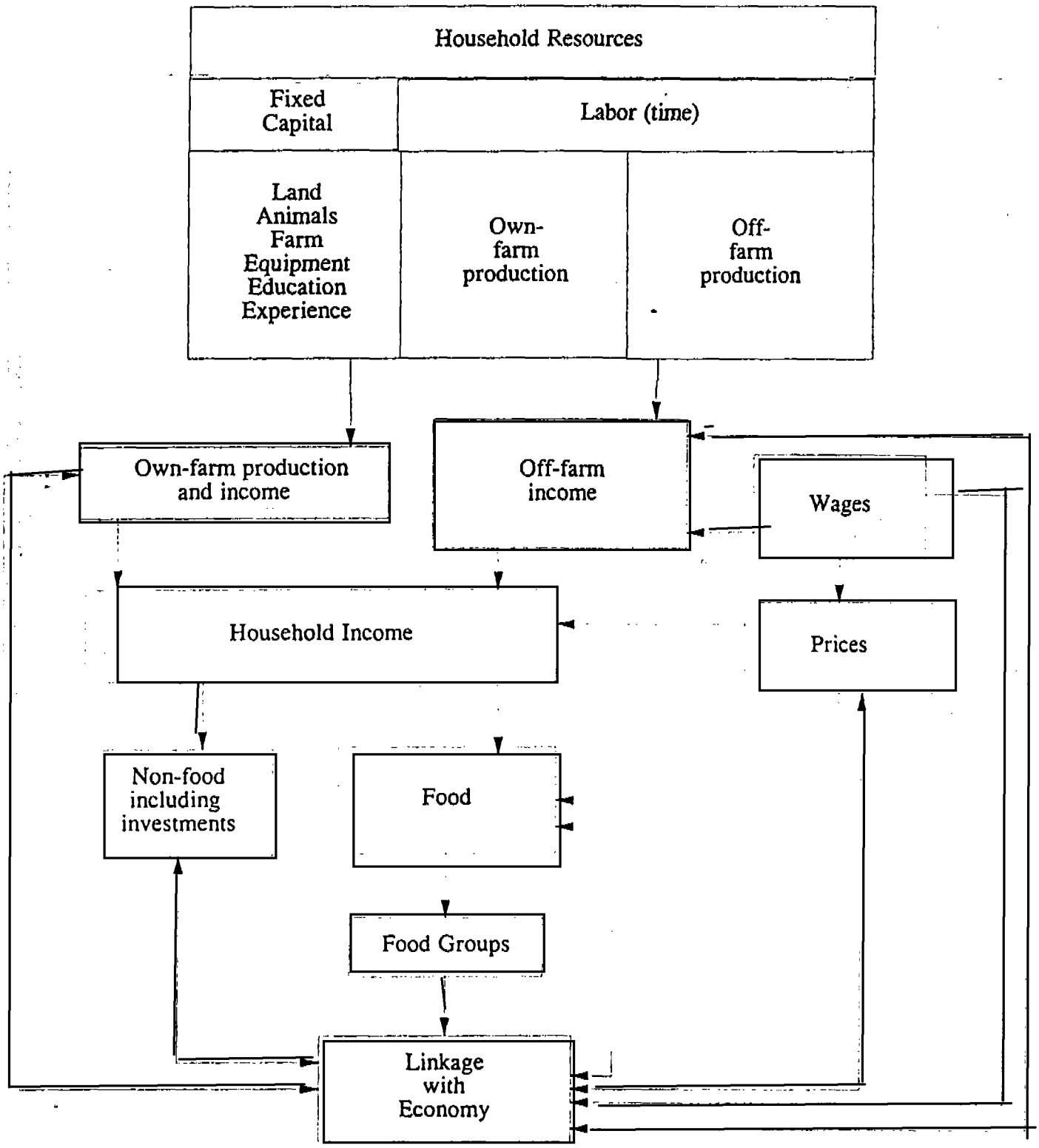

TABLE 1

HOUSEHOLDS DISTRIBUTION BY REGION, LOCATION AND INCOME DECILE

	All Households	Agricultural
Regional	100.0	100.0
NCR	16.0	0.4
I	5.3	4.8
II	3.9	6.0
III	10.6	7.7
IV	14.2	11.1
V	5.7	7.7
VI	8.0	11.0
VII	7.0	6.6
VIII	4.4	6.4
IX	3.8	5.7
X	5.8	8.0
XI	7.2	10.7
XII	3.2	5.3
XIII	2.0	2.1
XIV	2.9	6.7
Location	100.0	100.0
Urban	60.2	31.7
Rural	39.8	68.3
Income Decile	100.0	100.0
First	7.1	15.1
Second	9.0	18.3
Third	9.4	16.3
Fourth	9.7	15.0
Fifth	10.1	12.3
Sixth	10.5	9.7
Seventh	10.9	6.4
Eight	11.2	3.7
Ninth	11.3	2.2
Tenth	10.8	1.1

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TABLE 2

PERCENT DISTRIBUTION OF HOUSEHOLDS BY INCOME DECILE
(by region)

Region	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total
NCR	0.1	0.4	0.8	2.1	4.6	8.3	12.6	18.8	23.4	28.8	100.0
I	5.2	8.3	11.2	13.0	12.6	11.3	12.5	12.1	8.6	5.3	100.0
II	7.6	11.3	11.4	12.8	12.1	10.0	10.9	8.3	7.9	7.9	100.0
III	3.2	3.4	6.1	6.9	10.2	11.7	14.3	15.9	16.5	11.8	100.0
IV	3.2	6.1	8.1	8.8	10.5	12.5	12.3	13.7	12.5	12.3	100.0
V	11.4	16.0	17.5	13.8	11.2	8.6	7.4	5.9	4.5	3.8	100.0
VI	6.2	12.3	15.1	15.8	11.7	10.5	8.7	7.0	6.4	6.4	100.0
VII	14.6	13.7	11.0	11.7	10.0	9.3	9.4	7.5	7.0	5.9	100.0
VIII	15.6	18.1	14.6	13.0	11.4	8.3	6.2	4.9	4.6	3.2	100.0
IX	11.7	14.9	13.0	11.4	11.7	9.8	10.6	7.2	5.2	4.5	100.0
X	13.2	15.2	11.7	10.8	11.6	10.4	9.1	6.4	6.0	5.5	100.0
XI	11.2	11.3	9.4	12.1	10.7	11.7	10.1	8.9	8.5	6.2	100.0
XII	11.1	14.7	13.5	10.3	10.4	10.3	9.2	7.0	8.9	4.5	100.0
XIII	11.8	5.9	5.4	7.7	8.1	14.0	12.7	11.5	11.3	11.5	100.0
XIV	7.0	9.9	13.4	12.8	17.1	14.5	9.4	8.0	6.5	1.4	100.0

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TABLE 3

PERCENT DISTRIBUTION OF HOUSEHOLDS BY REGION
(By income decile)

Region	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
NCR	0.3	0.7	1.4	3.4	7.3	12.6	18.5	26.8	32.9	42.5
I	3.9	4.9	6.3	7.0	6.5	5.7	6.0	5.7	4.0	2.6
II	4.3	5.0	4.8	5.2	4.7	3.7	3.9	2.9	2.7	2.9
III	4.8	4.0	6.9	7.5	10.7	11.7	13.9	15.0	15.4	11.6
IV	6.5	9.7	12.3	12.9	14.7	16.9	16.1	17.4	15.7	16.2
V	9.2	10.2	10.7	8.1	6.3	4.7	3.9	3.0	2.2	2.0
VI	7.0	11.0	12.9	13.0	9.3	8.0	6.4	5.0	4.5	4.7
VII	14.5	10.7	8.2	8.4	6.9	6.2	6.0	4.7	4.3	3.8
VIII	9.8	8.9	6.9	5.9	5.0	3.5	2.5	1.9	1.8	1.3
IX	6.4	6.4	5.3	4.5	4.4	3.6	3.7	2.5	1.8	1.6
X	10.8	9.8	7.2	6.4	6.6	5.7	4.8	3.3	3.1	2.9
XI	11.4	9.1	7.2	8.9	7.6	8.0	6.7	5.7	5.4	4.1
XII	5.0	5.2	4.5	3.3	3.2	3.1	2.7	2.0	2.5	1.3
XIII	3.4	1.3	1.2	1.6	1.6	2.7	2.4	2.1	2.0	2.2
XIV	2.9	3.2	4.1	3.8	4.9	4.0	2.5	2.1	1.7	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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TABLE 4

PERCENT DISTRIBUTION OF AGRICULTURAL HOUSEHOLDS
(Urban/rural, by income decile)

Income Decile	Urban	Rural
First	12.0	16.5
Second	16.3	19.2
Third	15.7	16.5
Fourth	14.4	15.3
Fifth	12.3	12.3
Sixth	10.7	9.3
Seventh	8.1	5.5
Eight	5.7	2.7
Ninth	3.0	1.9
Tenth	1.9	0.7
Total	100.0	100.0

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TABLE 5

PERCENT DISTRIBUTION OF AGRI HOUSEHOLDS BY INCOME DECILE
(By region)

Region	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total
NCR	0.0	7.4	7.4	3.7	14.8	7.4	22.2	11.1	7.4	18.5	100.0
I	7.8	11.4	17.1	19.8	16.2	11.7	10.2	2.7	2.7	0.3	100.0
II	12.3	18.0	16.3	14.4	13.0	10.9	6.9	4.0	2.4	1.9	100.0
III	7.1	8.8	13.0	11.7	14.0	15.8	12.3	9.7	4.5	3.2	100.0
IV	8.0	15.1	16.3	16.6	14.9	12.7	7.6	5.3	2.2	1.3	100.0
V	16.6	22.0	21.4	15.0	12.2	6.7	3.9	1.3	0.4	0.6	100.0
VI	8.6	18.2	19.9	21.6	13.9	8.6	4.4	2.6	1.3	0.8	100.0
VII	30.1	27.7	12.3	13.2	8.0	5.2	1.3	1.5	0.4	0.2	100.0
VIII	22.1	23.7	17.9	14.5	10.3	5.8	3.6	0.9	0.9	0.2	100.0
IX	20.2	24.0	18.2	11.1	10.4	6.8	5.3	1.8	1.3	1.0	100.0
X	21.7	23.3	14.4	13.3	9.0	5.7	4.8	3.2	3.2	1.3	100.0
XI	18.5	16.9	14.0	15.2	8.5	11.0	6.9	4.8	3.2	1.1	100.0
XII	19.5	22.2	16.8	11.9	11.1	7.6	5.9	2.2	3.0	0.0	100.0
XIII	23.3	10.7	8.7	13.3	11.3	13.3	9.3	4.0	3.3	2.7	100.0
XIV	7.9	12.4	16.3	13.7	19.3	14.4	8.2	4.7	3.0	0.0	100.0
Total	15.1	18.3	16.3	15.0	12.3	9.7	6.4	3.7	2.2	1.1	100.0

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TABLE 6

CHARACTERISTICS OF HOUSEHOLDS
(By region)

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Type of Household															
Single Family	67.7	83.5	81.1	80.0	80.8	80.5	82.1	83.7	90.2	85.9	87.5	88.7	85.5	85.3	97.0
Extended Family	32.3	16.5	18.9	20.0	19.2	19.5	17.9	16.3	9.8	14.1	12.5	11.3	14.5	14.7	3.0
Total Household Members															
Less than 1 year old	2.3	1.8	1.9	1.6	1.8	2.5	2.1	1.6	1.7	2.9	2.8	2.4	2.4	2.5	1.6
Less than 7 years old	14.5	14.8	15.3	14.8	15.2	16.1	15.6	14.6	15.7	16.0	17.0	15.9	16.3	15.5	20.0
Less than 15 years old	17.5	20.8	19.5	20.4	19.9	21.9	20.5	19.2	21.7	18.9	20.1	20.6	21.0	21.2	22.3
Less than 25 years old	21.0	19.0	18.0	19.7	18.6	17.5	17.9	17.1	15.6	19.3	17.6	18.5	19.3	16.8	14.8
Members 25 years and older	44.8	43.5	45.3	43.5	44.5	41.9	43.9	47.5	45.2	42.9	42.5	42.6	41.1	44.0	41.3
Total Non-relatives	2.5	1.1	1.1	0.9	1.0	1.0	1.4	1.1	1.1	1.1	2.0	1.5	1.0	1.5	1.0
Total Employed in the Family	34.2	33.3	37.1	34.8	35.5	33.2	36.0	36.7	34.7	30.7	32.3	33.0	32.6	33.8	25.9
HH Head's Wife Employed?															
Yes	32.0	32.9	33.6	28.5	33.1	31.1	38.2	33.8	30.4	20.6	30.3	31.0	29.2	39.4	13.1
No	44.3	47.9	50.1	51.4	47.7	52.2	43.8	48.0	54.8	64.5	56.7	56.4	56.9	40.1	76.9
Not Applicable	23.7	19.2	16.3	20.1	19.2	16.7	17.9	18.3	14.8	14.9	13.0	12.6	13.9	20.6	10.1

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TABLE 7

CHARACTERISTICS OF HOUSEHOLDS
(By urbanity)

	Urban	Rural
Type of Household		
Single Family	77.5	87.2
Extended Family	22.5	12.8
Total Household Members		
Less than 1 year old	2.0	2.2
Less than 7 years old	15.0	16.2
Less than 15 years old	19.3	20.9
Less than 25 years old	19.2	17.6
Members 25 years and older	44.4	43.2
Total Non-relatives	1.9	0.7
Total Employed in the Family	34.1	34.4
HH Head's Wife Employed?		
Yes	32.6	29.3
No	47.4	55.7
Not Applicable	20.0	15.0

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TABLE 8

CHARACTERISTICS OF HOUSEHOLDS
(By income decile)

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Type of Household										
Single Family	92.9	91.2	89.5	89.4	87.0	86.0	81.2	76.6	70.3	58.4
Extended Family	7.1	8.8	10.5	10.6	13.0	14.0	18.8	23.4	29.7	41.6
Total Household Members										
Less than 1 year old	2.3	2.5	2.8	2.3	2.2	2.1	1.8	1.8	1.8	1.6
Less than 7 years old	16.2	19.2	18.8	17.6	16.8	16.7	15.0	13.6	12.1	10.6
Less than 15 years old	15.1	19.5	20.4	22.0	21.6	22.4	22.2	19.6	19.0	16.3
Less than 25 years old	12.7	13.4	15.8	15.9	17.6	17.7	18.8	21.4	23.5	24.9
Members 25 years and older	53.6	45.4	42.2	42.2	41.8	41.1	42.2	43.5	43.6	46.7
Total Non-relatives	0.3	0.6	0.7	0.3	0.3	0.9	0.7	1.6	2.2	5.6
Total Employed in the Family	39.5	34.0	33.2	32.4	31.9	31.6	32.4	34.9	35.4	37.7
HH Head's Wife Employed?										
Yes	15.2	23.1	26.6	27.7	26.7	29.4	33.3	37.4	42.0	42.5
No	56.4	59.6	58.8	59.0	59.3	56.0	50.7	43.0	37.9	33.5
Not Applicable	28.4	17.3	14.6	13.3	14.0	14.6	16.0	19.7	20.2	24.0

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TABLE 9

DISTRIBUTION OF HOUSEHOLDS BY SOURCES OF INCOME
(By urbanity)

	Urban	Rural
Wage Income	57.1	36.0
Agricultural	5.5	12.4
Non-agricultural	51.6	23.6
Entrepreneurial Income	28.0	51.6
Crop farming	8.1	32.4
Livestock & Poultry	0.6	1.6
Fishing	2.9	6.6
Others	16.4	11.0
Other Income sources	15.0	12.4

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TABLE 10

DISTRIBUTION OF HOUSEHOLDS BY SOURCES OF INCOME
(By region)

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Wage Income	66.6	36.6	41.7	51.8	55.5	41.3	51.7	49.2	36.8	36.5	48.4	42.0	38.0	39.8	10.3
Agricultural	0.5	3.8	9.6	7.5	8.7	9.8	21.8	8.0	7.6	5.4	15.0	12.9	9.4	1.8	0.2
Non-agricultural	66.1	32.8	32.1	44.3	46.8	31.5	29.9	41.2	29.2	31.1	33.4	29.1	28.6	38.0	10.1
Entrepreneurial Income	17.0	40.8	47.3	31.0	30.2	47.0	34.5	36.1	48.7	55.4	41.8	48.5	54.9	41.4	83.3
Crop farming	0.2	18.1	36.0	13.4	12.3	26.0	15.1	10.9	22.5	30.4	20.5	29.4	38.9	26.0	54.9
Livestock & Poultry	0.1	1.1	1.4	1.1	0.9	0.6	1.0	2.6	0.3	1.1	1.6	1.1	1.8	2.0	0.0
Fishing	0.2	5.8	0.6	2.1	3.1	7.2	4.5	7.1	12.0	10.0	4.6	3.7	2.5	0.0	18.8
Others	16.5	15.8	9.3	14.4	13.9	13.2	13.9	15.5	13.9	13.9	15.1	14.3	11.7	13.4	9.6
Other Income sources	16.5	22.6	11.0	17.2	14.4	11.8	13.8	14.6	14.4	8.2	9.9	9.6	7.2	18.8	6.5

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TABLE 11

DISTRIBUTION OF HOUSEHOLDS BY SOURCES OF INCOME
(By income decile)

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Wage Income	25.2	32.9	38.2	41.1	46.9	53.6	60.3	62.2	60.1	52.1
Agricultural	14.9	16.5	15.1	13	9.6	8.1	4.8	3.6	1.7	0.8
Non-agricultural	10.3	16.4	23.1	28.1	37.3	45.5	55.5	58.6	58.4	51.3
Entrepreneurial Income	54.7	54.1	51.2	49.5	43.5	36.2	29.2	24	21.5	23.8
Crop farming	39.3	35.4	29.9	26.6	21.8	15.9	10.3	6.4	4.3	2.5
Livestock & Poultry	2.4	1.4	1.1	1.5	0.7	1.4	0.9	0.5	0.2	0.4
Fishing	5.1	7.2	7.9	8.2	6.7	4.4	2.9	1.6	1.1	0.5
Others	7.9	10.1	12.3	13.2	14.3	14.5	15.1	15.5	15.9	20.4
Other Income sources	20.1	13	10.6	9.4	9.6	10.2	10.5	13.8	18.4	24.2

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TABLE 12

DISTRIBUTION OF AGRICULTURAL HOUSEHOLDS BY SOURCES OF INCOME
(By region)

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Wage Income	55.6	12.3	20.6	30.4	32.8	21.6	49.5	27.1	16.3	12.4	34.3	26.1	17.6	8.7	0.2
Agricultural	51.9	10.8	18.9	28.7	32.2	20.7	47.5	25.5	15.7	11.1	33.0	25.4	17.3	5.3	0.2
Non-agricultural	3.7	1.5	1.7	1.7	0.6	0.9	2.0	1.5	0.7	1.3	1.3	0.7	0.3	3.3	0.0
Entrepreneurial Income	44.4	81.1	75.9	66.5	64.0	75.0	46.1	65.8	71.4	84.9	60.0	70.2	77.6	79.3	99.2
Crop farming	14.8	58.0	70.5	52.9	45.8	56.6	32.7	33.6	44.7	60.6	44.3	59.4	69.7	73.3	73.6
Livestock and Poultry	7.4	3.6	2.4	3.7	3.4	0.6	2.2	8.4	0.7	2.0	3.4	2.1	3.0	5.3	0.0
Fishing	22.2	17.1	1.2	8.2	11.2	16.3	10.0	22.5	24.8	20.2	9.2	7.5	4.3	0.0	25.1
Others	0.0	2.4	1.9	1.7	3.6	1.7	1.2	1.3	1.1	2.0	3.1	1.2	0.5	0.7	0.4
Other Income	0.0	6.6	3.6	3.2	3.2	3.3	4.4	7.1	12.3	2.8	5.8	3.7	4.9	12.0	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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TABLE 13

DISTRIBUTION OF AGRICULTURAL HOUSEHOLDS BY SOURCES OF INCOME

By urban/rural

Income Source	Urban	Rural
Wage Income	31.2	22.5
Agricultural	30.0	21.4
Non-agricultural	1.2	1.1
Entrepreneurial Income	64.8	72.4
Crop farming	44.6	56.5
Livestock and Poultry	2.8	2.7
Fishing	16.1	11.3
Others	1.3	1.9
Other Income	4.0	5.0
Total	100.0	100.0

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TABLE 14

DISTRIBUTION OF AGRICULTURAL HOUSEHOLDS BY SOURCES OF INCOME
(By urban/rural, income decile)

	Urban										Rural									
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Wage Income	26.3	30.1	31.9	22.8	33.0	35.9	34.3	43.7	42.4	23.3	20.3	24.2	23.9	26.5	19.7	22.8	19.3	19.8	14.3	18.8
Agricultural	24.8	29.0	30.8	21.5	31.9	35.0	32.6	41.3	42.4	23.3	19.4	22.6	23.1	25.7	18.1	21.7	18.2	19.1	12.1	18.8
Non-agricultural	1.5	1.1	1.2	1.3	1.1	0.8	1.7	2.4	-	-	0.9	1.5	0.8	0.8	1.5	1.1	1.1	0.8	2.2	0.0
Entrepreneurial Income	62.0	62.4	66.4	74.5	64.8	63.3	62.4	54.8	57.6	76.7	70.3	68.9	71.2	70.2	77.1	74.7	78.8	80.2	82.4	81.3
Crop farming	50.4	45.0	45.7	50.8	44.7	38.0	37.0	35.7	37.9	53.5	57.9	55.2	54.4	51.6	58.1	58.7	61.7	64.1	67.0	56.3
Livestock and Poultry	1.9	1.7	2.6	2.2	2.6	2.5	3.9	4.8	6.1	14.0	3.7	2.3	1.5	2.9	1.4	5.2	4.2	1.5	1.1	9.4
Fishing	8.3	14.4	17.0	19.9	17.2	20.7	19.9	13.5	12.1	9.3	7.1	9.3	12.4	14.1	15.6	10.2	10.6	13.7	12.1	15.6
Others	1.5	1.4	1.2	1.6	0.4	2.1	1.7	0.8	1.5	-	1.7	2.2	2.9	1.6	2.0	0.7	2.3	0.8	2.2	0.0
Other Income	11.7	7.5	1.7	2.8	2.2	0.8	3.3	1.6	-	-	9.5	7.0	4.9	3.3	3.2	2.5	1.9	0.0	3.3	0.0

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TABLE 15

DISTRIBUTION OF AGRICULTURAL HOUSEHOLDS BY SOURCES OF INCOME
(By region, urban/rural)

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Urban															
Wage Income	55.6	12.2	14.0	34.2	36.8	32.1	58.1	23.6	19.2	20.3	43.5	32.3	23.1	18.5	0.0
Agricultural	51.9	12.2	12.8	32.2	35.6	32.1	56.5	22.1	17.2	19.2	41.6	31.3	23.1	13.2	-
Non-agricultural	3.7	-	1.2	2.0	1.2	-	1.6	1.5	2.0	1.1	1.9	1.0	-	5.3	-
Entrepreneurial Income	44.4	83.5	84.9	61.9	60.9	67.2	39.4	69.1	70.7	74.4	50.8	64.3	71.6	65.8	99.2
Crop farming	14.8	47.0	77.9	46.8	36.8	51.5	25.2	26.5	30.3	40.4	34.5	54.0	63.4	60.5	71.4
Livestock and Poultry	7.4	1.7	3.5	6.8	3.4	-	1.2	7.3	-	1.1	2.9	1.3	5.2	5.3	-
Fishing	22.2	33.9	-	7.8	18.4	14.2	12.6	34.6	38.4	30.8	10.5	8.0	3.0	-	27.0
Others	-	0.9	3.5	0.5	2.3	1.5	0.4	0.7	2.0	2.1	2.9	1.0	-	-	0.8
Other Income	-	4.4	1.2	3.9	2.3	0.7	2.4	7.3	10.1	5.3	5.7	3.5	5.2	15.8	0.8
Rural															
Wage Income	-	12.4	22.3	28.0	30.8	18.2	45.4	28.5	15.5	9.9	28.8	21.7	14.4	5.4	0.3
Agricultural	-	10.1	20.5	26.5	30.4	17.0	43.3	27.0	15.2	8.6	27.9	21.2	14.0	2.7	0.3
Non-agricultural	-	2.3	1.8	1.5	0.4	1.2	2.1	1.5	0.3	1.3	0.9	0.5	0.4	2.7	-
Entrepreneurial Income	-	79.9	73.7	69.2	65.6	77.6	49.2	64.4	71.6	88.1	65.5	74.5	80.9	84.0	99.1
Crop farming	-	63.8	68.6	56.6	50.4	58.2	36.2	36.5	48.8	66.9	50.3	63.3	73.3	77.7	74.4
Livestock and Poultry	-	4.6	2.1	1.8	3.3	0.7	2.7	8.9	0.9	2.3	3.7	2.7	1.7	5.4	-
Fishing	-	8.3	1.5	8.4	7.6	17.0	8.8	17.5	21.0	16.9	8.3	7.1	5.1	-	24.4
Others	-	3.2	1.5	2.4	4.3	1.7	1.5	1.5	0.9	2.0	3.2	1.4	0.8	0.9	0.3
Other Income	-	7.8	4.2	2.7	3.7	4.2	5.4	7.1	12.9	2.0	5.7	3.9	4.7	10.7	0.6

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TABLE 16

DISTRIBUTION OF AGRICULTURAL HOUSEHOLDS BY SOURCES OF INCOME
(by income decile)

Income Source	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Wage Income	21.8	25.8	26.3	25.4	23.9	27.4	25.4	31.5	26.1	21.3
Agricultural	20.7	24.4	25.5	24.4	22.5	26.3	24.0	30.0	24.8	21.3
Non-agricultural	1.0	1.4	0.9	0.9	1.4	1.0	1.3	1.6	1.3	0.0
Entrepreneurial Income	68.2	67.1	69.7	71.5	73.2	70.7	72.1	67.7	72.0	78.7
Crop farming	56.0	52.3	51.7	51.4	53.9	51.5	51.7	50.2	53.5	54.7
Livestock and Poultry	3.2	2.1	1.8	2.7	1.7	4.3	4.0	3.1	4.5	12.0
Fishing	7.4	10.7	13.8	15.9	16.1	13.8	14.4	13.6	12.1	12.0
Others	1.6	2.0	2.4	1.6	1.5	1.2	2.0	0.8	1.9	0.0
Other Income	10.0	7.1	4.0	3.1	2.9	1.9	2.5	0.8	1.9	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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TABLE 17

SUMMARY STATISTICS: FAMILY EXPENDITURES PATTERN

	Food						Non-Food
	Total Food	Cereals	Fruits & Vegies	Meat	Dairy Goods	Others	
Regional							
NCR	49.4	21.4	9.9	18.9	9.0	40.9	50.6
Region I	56.3	37.0	10.1	12.5	6.3	34.1	43.7
Region II	57.7	33.6	11.6	13.9	6.4	34.5	42.3
Region III	55.1	29.2	9.5	16.3	7.7	37.4	44.9
Region IV	54.7	32.0	8.7	13.1	6.9	39.3	45.3
Region V	60.4	39.4	9.5	7.0	6.0	38.1	39.6
Region VI	57.1	41.4	7.8	7.5	5.8	37.5	42.9
Region VII	59.7	39.9	7.0	9.2	4.9	39.0	40.3
Region VIII	63.1	40.8	7.8	8.3	5.2	37.9	36.9
Region IX	61.7	38.7	9.8	6.7	5.6	39.2	38.3
Region X	59.1	42.0	9.1	8.1	5.5	35.3	40.9
Region XI	59.0	36.9	9.5	9.8	5.7	38.1	41.0
Region XII	58.7	41.6	9.4	9.4	5.6	34.0	41.3
Region XIII	56.1	37.1	10.8	15.3	6.8	30.0	43.9
Region XIV	59.5	40.2	8.6	4.0	4.1	43.1	40.5
Location							
Urban	53.5	30.2	9.1	14.0	7.5	39.1	46.5
Rural	60.9	40.4	9.2	8.9	5.1	36.4	39.1
Income Decile							
First	67.1	46.7	9.4	6.1	3.5	34.4	32.9
Second	65.8	44.9	9.3	6.7	4.1	35.0	34.2
Third	63.7	42.2	9.0	7.3	4.8	36.6	36.3
Fourth	62.2	40.7	9.1	8.2	5.4	36.7	37.8
Fifth	60.6	37.5	9.0	9.7	6.1	37.7	39.4
Sixth	57.4	34.7	9.0	11.3	6.9	38.1	42.6
Seventh	55.0	31.5	9.1	12.8	7.4	39.1	45.0
Eighth	51.7	28.0	9.2	15.0	8.2	39.7	48.3
Ninth	47.6	24.7	9.2	17.3	8.5	40.2	52.4
Tenth	41.3	20.7	9.3	20.7	8.8	40.4	58.7

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TABLE 18

HOUSEHOLD EXPENDITURE PATTERN
(By region, by income class)

Region	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Food										
NCR	58.4	57.3	58.2	57.9	58.4	55.6	54.8	52.3	47.9	42.2
Region I	64.0	63.1	60.5	60.8	59.7	57.4	54.7	49.8	47.8	39.6
Region II	65.5	65.1	64.4	62.0	60.7	59.9	56.0	52.5	42.4	38.5
Region III	61.8	61.7	61.6	60.2	59.5	58.1	55.0	53.9	51.5	45.3
Region IV	65.0	62.9	62.6	61.7	60.8	57.0	54.7	50.9	47.5	41.5
Region V	67.3	67.2	64.6	63.6	60.7	55.8	56.3	50.6	43.7	32.5
Region VI	68.1	65.1	63.6	62.0	58.4	54.0	52.0	47.5	43.0	37.8
Region VII	66.9	66.5	66.0	62.7	60.0	59.4	55.9	52.9	46.4	39.1
Region VIII	69.8	69.2	66.1	66.2	64.3	59.1	53.7	50.6	45.5	37.9
Region IX	67.6	67.8	64.8	66.3	62.6	59.9	57.3	53.8	49.9	43.4
Region X	65.0	66.0	64.7	64.1	61.2	56.1	53.6	48.5	47.7	38.5
Region XI	69.4	68.0	65.5	62.1	62.7	59.1	55.6	51.5	44.6	37.4
Region XII	66.8	65.2	63.4	62.2	60.1	59.0	54.6	51.7	45.8	36.5
Region XIII	68.6	64.7	63.7	57.9	61.7	57.7	55.1	52.4	46.2	42.4
Region XIV	72.8	63.3	59.2	60.3	61.6	58.3	59.9	53.1	48.5	35.0
Non-food										
NCR	41.6	42.7	41.8	42.1	41.6	44.4	45.2	47.7	52.1	57.8
Region I	36.0	36.9	39.5	39.2	40.3	42.6	45.3	50.2	52.2	60.4
Region II	34.5	34.9	35.6	38.0	39.3	40.1	44.0	47.5	57.6	61.5
Region III	38.2	38.3	38.4	39.8	40.5	41.9	45.0	46.1	48.5	54.7
Region IV	35.0	37.1	37.4	38.3	39.2	43.0	45.3	49.1	52.5	58.5
Region V	32.7	32.8	35.4	36.4	39.3	44.2	43.7	49.4	56.3	67.5
Region VI	31.9	34.9	36.4	38.0	41.6	46.0	48.0	52.5	57.0	62.2
Region VII	33.1	33.5	34.0	37.3	40.0	40.6	44.1	47.1	53.6	60.9
Region VIII	30.2	30.8	33.9	33.8	35.7	40.9	46.3	49.4	54.5	62.1
Region IX	32.4	32.2	35.2	33.7	37.4	40.1	42.7	46.2	50.1	56.6
Region X	35.0	34.0	35.3	35.9	38.8	43.9	46.4	51.5	52.3	61.5
Region XI	30.6	32.0	34.5	37.9	37.3	40.9	44.4	48.5	55.4	62.6
Region XII	33.2	34.8	36.6	37.8	39.9	41.0	45.4	48.3	54.2	63.5
Region XIII	31.4	35.3	36.3	42.1	38.3	42.3	44.9	47.6	53.8	57.6
Region XIV	27.2	36.7	40.8	39.7	38.4	41.7	40.1	46.9	51.5	65.0

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TABLE 19

EXPENDITURE ON FOOD ITEMS
(By region, by income decile)

Region	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Cereals										
NCR	36.6	27.5	26.9	28.7	26.2	24.6	23.7	22.3	20.6	17.9
Region I	46.7	44.9	42.5	40.2	39.6	39.2	35.1	30.1	26.4	22.3
Region II	41.5	39.7	37.5	36.4	37.4	32.3	29.7	28.2	26.4	20.9
Region III	41.0	41.1	37.0	35.6	33.2	31.6	29.5	26.8	23.4	19.8
Region IV	45.7	44.9	39.6	39.2	35.5	33.4	30.5	27.9	24.7	21.0
Region V	46.8	43.5	41.3	40.6	38.6	37.7	35.4	32.4	27.2	25.5
Region VI	49.4	47.7	45.3	45.1	42.5	42.0	37.0	34.8	30.6	24.9
Region VII	48.1	46.4	44.6	44.7	39.6	36.5	33.9	31.9	29.7	24.4
Region VIII	47.7	44.0	43.9	41.6	39.0	34.8	36.3	34.2	30.2	28.7
Region IX	45.1	42.3	38.8	40.8	37.3	38.4	35.9	34.9	32.3	28.5
Region X	49.4	47.5	47.9	44.5	42.2	38.7	36.8	35.4	31.1	25.7
Region XI	43.3	43.6	44.5	39.8	37.7	35.3	33.2	29.8	28.3	25.5
Region XII	49.5	47.8	43.4	45.0	40.8	42.0	40.7	33.6	30.3	26.2
Region XIII	51.0	51.2	51.1	42.4	42.9	35.1	33.1	30.8	27.0	24.9
Region XIV	47.6	48.0	41.2	39.4	40.5	40.6	38.8	34.7	28.6	29.2
Meat										
NCR	14.4	10.1	14.3	12.2	14.6	16.7	16.4	18.1	19.6	21.9
Region I	7.6	9.7	10.2	10.4	11.0	11.8	12.5	14.8	17.3	22.9
Region II	9.4	11.0	12.5	12.3	12.6	14.0	14.6	15.5	16.9	23.1
Region III	11.5	10.8	11.0	13.0	14.7	15.0	15.3	17.3	20.0	21.1
Region IV	5.9	5.8	7.4	8.1	10.8	11.6	14.0	15.3	17.2	22.1
Region V	4.7	5.4	5.2	6.2	6.3	7.5	8.7	10.4	14.8	15.6
Region VI	4.5	5.5	5.7	6.5	6.2	7.4	8.5	9.5	11.0	15.9
Region VII	5.3	6.1	7.1	7.3	8.3	9.7	11.9	12.2	15.9	17.5
Region VIII	4.8	7.4	6.3	8.5	8.4	11.3	10.3	12.0	12.6	15.6
Region IX	4.6	5.3	5.8	4.5	6.7	6.8	7.8	9.1	10.2	15.1
Region X	5.5	5.9	6.0	6.0	7.2	7.9	9.4	12.3	14.0	18.3
Region XI	6.7	7.2	7.0	8.3	9.2	9.3	10.7	12.6	13.9	17.4
Region XII	7.1	6.5	8.6	7.8	8.5	8.9	9.4	11.5	16.0	17.8
Region XIII	9.7	9.9	11.7	11.8	14.0	17.2	16.1	15.7	18.7	22.2
Region XIV	2.3	2.7	3.1	3.0	3.5	5.0	5.3	5.5	5.9	7.9

Table 19 (page 2....)

Fruit & Veg.										
NCR	10.8	10.9	10.5	10.8	10.6	10.1	10.1	9.9	9.6	9.6
Region I	9.9	10.1	10.4	10.4	9.8	9.9	10.2	9.6	10.1	10.6
Region II	16.0	13.1	12.1	11.5	10.4	10.7	10.6	10.6	10.9	11.0
Region III	11.8	10.9	9.9	10.5	9.4	9.6	8.9	9.1	9.3	9.3
Region IV	10.1	8.7	9.1	9.1	8.9	8.5	8.6	8.6	8.6	8.4
Region V	9.4	9.8	9.5	9.4	9.9	9.0	9.6	9.3	9.6	9.3
Region VI	8.1	8.0	7.6	8.0	8.0	7.0	7.7	7.7	7.8	8.0
Region VII	7.6	6.8	7.0	6.8	6.2	6.1	7.0	7.3	7.3	7.7
Region VIII	7.6	8.2	7.6	7.2	7.3	8.9	7.2	7.4	8.7	9.5
Region IX	10.0	10.4	10.0	9.9	9.7	8.8	9.1	9.1	10.1	10.9
Region X	9.2	9.7	8.5	9.1	9.3	9.1	9.1	8.0	8.9	8.9
Region XI	10.4	10.1	8.9	9.1	9.4	9.9	9.2	9.1	9.1	10.1
Region XII	8.7	9.6	10.6	9.4	9.3	8.9	8.8	9.5	8.9	9.3
Region XIII	8.5	9.3	9.1	9.9	11.4	11.0	11.6	12.0	11.8	11.4
Region XIV	8.1	9.2	8.7	8.1	8.4	8.2	9.5	9.1	9.2	9.3
Dairy Products										
NCR	6.6	8.7	9.6	8.8	9.3	9.8	9.0	9.3	9.0	8.6
Region I	4.7	5.2	5.9	5.9	5.8	5.8	6.0	7.6	8.2	8.4
Region II	3.6	4.4	6.2	6.1	6.2	6.2	7.1	7.1	8.5	9.3
Region III	5.3	5.8	6.6	7.1	7.2	7.2	7.5	8.0	8.2	9.4
Region IV	3.4	4.3	5.2	5.2	6.8	7.2	7.5	7.7	7.9	8.5
Region V	3.3	5.3	4.8	5.8	5.8	6.7	7.3	8.9	9.5	10.2
Region VI	4.8	4.3	4.6	5.0	5.3	5.4	6.8	6.8	8.6	10.8
Region VII	2.5	2.9	3.5	4.2	5.0	6.1	6.3	7.4	7.7	9.0
Region VIII	3.2	3.7	4.6	4.8	5.6	7.0	7.3	7.6	8.4	9.9
Region IX	3.0	3.9	5.2	4.5	6.0	5.7	5.9	8.3	10.1	9.7
Region X	3.1	3.2	4.0	4.9	5.9	5.8	7.2	9.0	8.3	9.8
Region XI	4.4	4.1	4.2	4.6	5.6	6.2	7.3	7.3	8.0	7.1
Region XII	2.6	3.7	4.2	6.3	5.4	6.0	6.7	8.5	9.1	8.8
Region XIII	3.3	3.7	4.5	8.0	5.1	7.0	8.7	8.9	8.7	6.9
Region XIV	2.7	2.3	3.2	3.0	3.4	5.4	5.1	6.3	7.4	5.4

Table 19 (page 3...)

Other Food										
NCR	31.6	42.8	38.7	39.6	39.4	38.8	40.7	40.4	41.3	42.0
Region I	31.0	30.0	30.9	33.1	33.8	33.3	36.2	37.8	38.0	35.9
Region II	29.6	31.8	31.6	33.7	33.3	36.7	38.0	38.6	37.2	35.7
Region III	30.4	31.4	35.4	33.8	35.5	36.5	38.9	38.8	39.0	40.3
Region IV	34.9	36.4	38.7	38.3	38.1	39.3	39.4	40.5	41.6	40.0
Region V	35.8	36.0	39.2	38.1	39.4	39.1	39.0	39.0	38.9	39.4
Region VI	33.2	34.5	36.8	35.5	37.9	38.2	40.0	41.2	41.9	40.4
Region VII	36.4	37.8	37.7	36.9	40.9	41.7	40.9	41.3	39.4	41.4
Region VIII	36.7	36.7	37.6	38.0	39.8	38.1	38.9	38.8	40.0	36.4
Region IX	37.3	38.1	40.2	40.2	40.4	40.2	41.2	38.7	37.2	35.9
Region X	32.7	33.8	33.7	35.4	35.4	38.4	37.6	35.2	37.7	37.4
Region XI	35.3	35.0	35.4	38.1	38.2	39.4	39.6	41.2	40.7	40.0
Region XII	32.2	32.5	33.2	31.5	36.0	34.3	34.3	36.9	35.7	37.9
Region XIII	27.5	25.9	23.5	27.9	26.6	29.7	30.5	32.7	33.9	34.5
Region XIV	39.2	37.8	43.8	46.5	44.3	40.8	41.3	44.4	48.9	48.2

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TABLE 20

SUMMARY STATISTICS
EXPENDITURE PATTERNS OF AGRICULTURAL HOUSEHOLDS

	FOOD						Non-Food
	Total	Cereals	Meat	Fruits & Vegies	Dairy Products	Other Food	
Regional							
NCR	59.1	25.1	9.0	16.0	8.0	41.9	40.9
I	61.1	41.4	10.1	11.4	5.4	31.6	38.9
II	62.8	36.5	12.6	12.2	5.3	33.3	37.2
III	59.7	35.8	9.9	13.6	6.7	34.0	40.3
IV	62.8	41.4	9.6	7.6	4.8	36.6	37.2
V	64.8	43.5	9.9	5.1	4.6	36.9	35.2
VI	62.4	46.3	7.8	6.1	4.4	35.4	37.6
VII	66.5	48.2	7.1	6.0	2.6	36.2	33.5
VIII	68.7	43.0	7.9	6.8	3.8	38.6	31.3
IX	66.8	40.9	10.4	6.0	3.6	39.1	33.2
X	64.0	46.6	9.6	6.8	3.8	33.2	36.0
XI	65.3	41.1	10.0	8.0	4.4	36.5	34.7
XII	62.7	45.8	9.8	8.4	4.4	31.7	37.3
XIII	62.2	44.4	10.3	12.9	4.9	27.5	37.8
XIV	61.7	41.9	8.9	3.6	3.4	42.2	38.3
Location							
Urban	62.5	41.0	9.1	8.2	5.0	36.7	37.5
Rural	64.3	43.3	9.6	7.6	4.2	35.3	35.7
Income Decile							
1st	68.3	47.4	9.6	6.1	3.1	33.7	31.7
2nd	66.8	45.8	9.6	6.4	3.5	34.7	33.2
3rd	65.3	43.4	9.4	7.0	4.4	35.8	34.7
4th	63.9	43.3	9.2	7.3	4.3	35.9	36.1
5th	62.7	40.6	9.3	8.3	4.8	37.1	37.3
6th	60.2	39.7	9.1	9.5	5.4	36.3	39.8
7th	58.8	37.4	9.8	10.1	5.5	37.1	41.2
8th	55.9	34.8	9.5	11.5	6.4	37.7	44.1
9th	51.8	30.5	9.8	13.4	7.4	39.0	48.2
10th	42.6	25.1	10.2	18.9	8.8	36.9	57.4

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TABLE 21

CHARACTERISTICS OF SURPLUS AND DEFICIT HOUSEHOLDS
(In Percent)

	SURPLUS	DEFICIT
Type of Households	100.00	100.00
Single Family	80.49	83.67
Extended Family	19.51	16.33
Total Household Members	100.00	100.00
less than 1 yr. old	2.0	2.4
less than 7 yrs. old	15.1	16.5
less than 15 yrs. old	19.2	22.0
less than 25 yrs. old	19.0	17.5
members 25 yrs. & over	44.8	41.7
Total Non-relatives	1.5	1.7
Total Employed in the Family	35.6	30.3
	100.00	100.00
HH Head's Wife Employed	32.19	28.85
YES	48.88	55.74
NO	18.92	15.42
N/A		

TABLE 22

EXPENDITURES OF SURPLUS VS. DEFICIT HOUSEHOLDS
(In Percent)

	SURPLUS	DEFICIT
Food	55.9	57.9
Cereals	33.9	35.2
Fruits	9.1	9.4
Meat	12.2	11.5
Dairy	6.6	6.4
Other Food	38.2	37.5
Non-Food	44.1	42.1
Total	100.00	100.00

TABLE 23

INCOME DISTRIBUTION OF SURPLUS AND DEFICIT HOUSEHOLDS
(In Percent)

	SURPLUS	DEFICIT
FIRST	4.29	14.74
SECOND	7.12	14.02
THIRD	8.20	12.59
FOURTH	9.20	11.19
FIFTH	10.09	10.09
SIXTH	10.67	10.11
SEVENTH	11.65	8.73
EIGHT	12.19	8.59
NINTH	13.24	6.08
TENTH	13.36	3.86
Total	100.00	100.00

TABLE 24

RATIO OF SURPLUS TO DEFICIT HOUSEHOLDS PER INCOME DECILE

(In Percent)

	SURPLUS	DEFICIT
FIRST	44.73	55.27
SECOND	58.54	41.46
THIRD	64.41	35.59
FOURTH	69.55	30.45
FIFTH	73.55	26.45
SIXTH	74.57	25.43
SEVENTH	78.77	21.23
EIGHT	79.77	20.23
NINTH	85.82	14.18
TENTH	90.58	9.42

TABLE 25

DISTRIBUTION OF SURPLUS TO DEFICIT HOUSEHOLDS BY URBANITY
(In Percent)

	SURPLUS	DEFICIT
URBAN	61.47	56.56
RURAL	38.53	43.44
Total	100.00	100.00

TABLE 26

RATIO OF SURPLUS TO DEFICIT HOUSEHOLDS PER URBANITY
(In Percent)

	SURPLUS	DEFICIT	TOTAL
URBAN	75.13	24.87	100.00
RURAL	71.14	28.86	100.00

TABLE 27

SOURCES OF INCOME OF DEFICIT HOUSEHOLDS BY REGION
(In Percent)

Sources of Income	NCR	Region I	Region II	Region III	Region IV	Region V	Region VI	Region VII	Region VIII	Region IX	Region X	Region XI	Region XII	CAR	ARMM
Wages															
Agricultural	0.56	2.42	13.51	9.08	8.70	9.72	22.46	7.84	8.81	5.61	10.05	12.86	4.83	2.50	0.00
Non-Agricultural	69.54	22.12	20.27	33.12	43.51	22.22	28.44	28.10	25.76	19.63	24.62	18.45	14.01	24.17	5.94
Entrepreneurial															
Crop Farming	0.00	28.48	43.24	19.11	14.86	34.44	17.22	13.73	26.10	48.60	28.14	33.98	51.21	38.33	50.50
Livestock & Poultry	0.14	1.52	1.35	1.11	0.94	1.11	1.35	4.25	0.34	0.93	2.26	2.91	2.42	0.83	0.00
Fishing	0.42	6.67	1.35	2.55	3.75	7.22	4.04	11.44	5.08	8.88	5.28	3.64	4.83	0.00	19.80
Others	14.05	14.24	9.01	14.01	12.18	9.17	11.83	16.34	17.63	8.88	16.33	13.83	11.59	6.67	12.87
Other Sources	15.30	24.55	11.26	21.02	16.06	16.11	14.67	18.30	16.27	7.48	13.32	14.32	11.11	27.50	10.89
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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TABLE 28

SOURCES OF INCOME OD SURPLUS HOUSEHOLDS BY REGION
(In Percent)

Sources of Income	NCR	Region I	Region II	Region III	Region IV	Region V	Region VI	Region VII	Region VIII	Region IX	Region X	Region XI	Region XII	CAR	ARMM
Wages															
Agricultural	0.51	4.33	8.24	6.86	8.67	9.85	21.31	8.02	6.98	5.36	17.33	12.90	11.37	1.55	0.19
Non-Agricultural	65.20	37.13	36.29	48.47	47.90	35.28	30.84	44.55	30.80	35.06	37.50	32.87	34.95	43.17	10.84
Entrepreneurial															
Crop Farming	0.22	13.86	33.44	11.24	11.42	22.45	13.74	10.25	20.94	24.03	16.86	27.72	33.47	21.43	55.70
Livestock & Poultry	0.07	0.99	1.43	1.02	0.90	0.34	0.75	2.23	0.30	1.14	1.30	0.44	1.47	2.48	0.00
Fishing	0.11	5.45	0.32	1.98	2.83	7.22	4.86	6.03	15.17	10.39	4.25	3.75	1.47	0.00	18.63
Others	17.15	16.46	9.35	14.61	14.46	14.89	15.23	15.29	12.29	15.58	14.50	14.47	11.79	15.84	8.94
Other Sources	16.75	21.78	10.94	15.81	13.82	9.97	13.27	13.64	13.51	8.44	8.25	7.85	5.47	15.53	5.70
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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TABLE 29

SOURCES OF INCOME OF DEFICIT HOUSEHOLDS BY URBANITY
(In Percent)

	URBAN	RURAL
Wages		
Agricultural	5.87	13.14
Non-Agricultural	46.16	14.79
Entrepreneurial		
Crop Farming	11.39	38.95
Livestock & Poultry	0.83	2.09
Fishing	3.46	5.95
Others	15.22	10.21
Other Sources	17.07	14.87
Total	100.00	100.00

TABLE 30

SOURCES OF INCOME OF SURPLUS HOUSEHOLDS BY URBANITY
(In Percent)

	URBAN	RURAL
Wages		
Agricultural	5.35	12.03
Non-Agricultural	53.34	27.25
Entrepreneurial		
Crop Farming	7.03	29.82
Livestock & Poultry	0.47	1.45
Fishing	2.72	6.82
Others	16.82	11.32
Other Sources	14.27	11.32
Total	100.00	100.00

TABLE 31

SOURCES OF INCOME OF DEFICIT HOUSEHOLDS BY INCOME DECILE
(In Percent)

Sources of Income	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eight	Ninth	Tenth
Wages										
Agricultural	12.56	13.57	12.62	12.48	8.48	6.74	3.60	3.46	2.30	0.00
Non-Agricultural	6.87	14.20	20.53	24.96	35.47	46.98	58.00	58.54	58.05	57.01
Entrepreneurial										
Crop Farming	44.79	36.74	30.51	27.93	22.15	11.57	7.40	4.07	3.45	0.90
Livestock & Poultry	2.37	1.99	1.25	1.56	1.04	1.38	1.00	0.41	0.86	0.00
Fishing	3.91	7.47	6.24	8.11	5.19	3.28	1.80	1.63	1.15	0.00
Others	7.94	10.46	13.45	12.64	15.05	15.54	15.00	16.67	15.80	13.12
Other Sources	21.56	15.57	15.40	12.32	12.63	14.51	13.20	15.24	18.39	28.96
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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TABLE 32

SOURCES OF INCOME OF SURPLUS HOUSEHOLDS BY INCOME DECILE
(In Percent)

Sources of Income	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eight	Ninth	Tenth
Wages										
Agricultural	17.86	18.52	16.48	13.11	9.96	8.60	5.12	3.61	1.61	0.85
Non-Agricultural	14.49	17.99	24.52	29.51	37.96	44.99	54.77	58.61	58.47	50.66
Entrepreneurial										
Crop Farming	32.50	34.57	29.50	26.09	21.72	17.37	11.11	7.01	4.46	2.63
Livestock & Poultry	2.34	0.97	1.07	1.43	0.56	1.41	0.92	0.52	0.14	0.47
Fishing	6.59	7.05	8.81	8.27	7.28	4.71	3.23	1.65	1.04	0.56
Others	7.91	9.79	11.65	13.52	14.06	14.13	15.09	15.15	15.90	21.17
Other Sources	18.30	11.11	7.97	8.06	8.46	8.78	9.76	13.45	18.37	23.66
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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TABLE 33

NUMBER OF SURPLUS AND DEFICIT RURAL HOUSEHOLDS (By Income Decile)

	Total	Surplus Units	Deficit Units
First	1039	474	565
Second	1262	741	521
Third	1210	809	401
Fourth	1160	818	342
Fifth	1043	804	239
Sixth	889	710	179
Seventh	732	634	98
Eighth	589	511	78
Ninth	454	405	49
Tenth	245	229	16
TOTAL	8,623	6,134	2,489

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TABLE 34

RURAL HOUSEHOLDS

Income Class (1)	No. of Households (2)	Number of Households per Income Source							Total Income (10)	Total Expenditure (11)	(10) - (11) (12)
		Wages		Entrepreneurial				Others			
		Agri (3)	Non-agri (4)	Crop Farm. (5)	L&P (6)	Fishing (7)	Others (8)	(9)			
First	1039	159	72	463	30	56	71	188	12,515	13,972	(1,457)
Second	1262	213	167	518	21	87	108	148	19,204	19,074	130
Third	1210	193	200	442	14	101	132	128	24,698	23,454	1,244
Fourth	1160	195	226	391	23	107	125	93	30,379	27,620	2,759
Fifth	1043	113	239	352	8	97	131	103	37,156	32,082	5,074
Sixth	889	98	262	270	24	50	103	82	45,667	38,401	7,266
Seventh	732	48	282	171	14	29	97	91	56,904	44,845	12,059
Eighth	589	28	283	96	3	19	76	84	74,089	57,030	17,059
Ninth	454	12	216	67	1	12	60	86	104,008	77,222	26,786
Tenth	245	7	92	28	3	8	45	62	197,247	120,892	76,355

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TABLE 35

NUMBER OF SURPLUS AND DEFICIT AGRICULTURAL HOUSEHOLDS
(By Income Decile)

	Total	Surplus Units	Deficit Units
First	1056	447	609
Second	1282	753	529
Third	1139	751	388
Fourth	1053	720	333
Fifth	863	643	220
Sixth	680	542	138
Seventh	445	378	67
Eighth	257	215	42
Ninth	157	136	21
Tenth	75	74	1
TOTAL	7,007	4,659	2,348

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TABLE 36

AGRICULTURAL HOUSEHOLDS

Income Class (1)	No. of Households (2)	Number of Households per Income Source							Total Income (10)	Total Expenditure (11)	(10) - (11) (12)
		Wages		Entrepreneurial				Others			
		Agri (3)	Non-agri (4)	Crop Farm. (5)	L&P (6)	Fishing (7)	Others (8)	(9)			
First	1056	219	11	591	34	78	17	106	12,477	14,352	(1,875)
Second	1282	313	18	671	27	137	25	91	19,148	19,247	(99)
Third	1139	290	10	589	21	157	27	45	24,739	23,574	1,165
Fourth	1053	257	10	541	28	167	17	33	30,336	28,194	2,142
Fifth	863	194	12	465	15	139	13	25	36,971	32,578	4,393
Sixth	680	179	7	350	29	94	8	13	45,455	38,344	7,111
Seventh	445	107	6	230	18	64	9	11	56,903	45,671	11,232
Eighth	257	77	4	129	8	35	2	2	73,367	56,712	16,655
Ninth	157	39	2	86	5	19	3	3	102,669	77,256	25,413
Tenth	75	16	0	41	9	9	0	0	199,635	122,935	76,700

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TABLE 37

NUMBER OF SURPLUS AND DEFICIT FARM HOUSEHOLDS (By Income Decile)

	Total	Surplus Units	Deficit Units
First	920	362	558
Second	1,072	605	467
Third	969	599	370
Fourth	924	640	284
Fifth	802	586	216
Sixth	646	495	151
Seventh	557	476	81
Eighth	432	367	65
Ninth	335	304	31
Tenth	242	219	23
TOTAL	6,899	4,653	2,246

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TABLE 38

FARM HOUSEHOLDS

Income Class (1)	No. of Households (2)	Number of Households per Income Source							Total Income (10)	Total Expenditure (11)	(10) - (11) (12)
		Wages		Entrepreneurial				Others			
		Agri (3)	Non-agri (4)	Crop Farm. (5)	L&P (6)	Fishing (7)	Others (8)	(9)			
First	920	69	34	600	31	18	32	136	12,364	14,674	(2,310)
Second	1072	87	78	687	23	26	50	121	19,193	19,528	(335)
Third	969	80	85	605	19	30	64	86	24,718	24,195	523
Fourth	924	77	94	561	25	33	58	76	30,356	28,287	2,069
Fifth	802	49	98	477	10	20	65	83	37,176	32,646	4,530
Sixth	646	42	105	362	22	16	43	56	45,657	38,903	6,754
Seventh	557	28	149	243	14	9	55	59	56,903	45,395	11,508
Eighth	432	16	147	156	6	6	38	63	74,059	57,355	16,704
Ninth	335	7	126	106	2	2	31	61	104,355	76,360	27,995
Tenth	242	2	85	58	5	2	35	55	204,735	132,806	71,929

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TABLE 39

REAL EXPENDITURE FUNCTION, ALL HOUSEHOLDS
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-3.138364	-12.487
LCEREAL2	-0.210789	-36.985
LFRUIT2	-0.049139	-8.852
LMEAT2	-0.079797	-15.331
LDAIRY2	-0.045847	-3.888
LOTFOD2	-0.191929	-20.095
LNNFOD2	0.356697	47.209
LNTX	1.646977	36.740
LNTX2	-0.039999	-19.155
CH06	0.032667	22.658
CH714	0.031382	26.174
SINGLE	-0.024577	-2.548
MARRIED	0.031474	6.175
AGE	0.000208	1.311
NREL	-0.008870	-2.479
EDUC2	0.034013	8.838
EDUC3	-0.039482	-8.556
EDUC4	-0.102133	-15.413
TOTEMP	0.028925	18.796
REG1	-0.069714	-7.326
REG2	-0.087742	-7.989
REG3	-0.046989	-6.086
REG4	-0.069368	-9.360
REG5	-0.069019	-7.814
REG6	-0.088016	-11.372
REG7	-0.060962	-6.200
REG8	-0.043039	-4.427
REG9	-0.050018	-4.756
REG10	-0.078408	-9.089
REG11	-0.049523	-5.711
REG12	-0.083381	-7.721
CAR	-0.054412	-4.418
ARMM	-0.112675	-9.888
DURBAN	0.004369	1.262
DAGIND	0.048507	12.800
Adjusted R-Squared	*0.8928*	
F [32, 21557]	*5289.612*	

TABLE 40

PARAMETER ESTIMATES OF THE QUAIDS, ALL HOUSEHOLDS
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	0.171152	0.108523	0.643240	-0.328358
	(1.265)	(1.903)	(7.261)	(-5.282)
LCEREAL2	0.003178	-0.003639	0.015415	0.008099
	(1.177)	(-3.432)	(10.873)	(6.565)
LFRUIT2	-0.003639	0.001007	0.001478	-0.001459
	(-3.432)	(0.904)	(1.807)	(-1.382)
LMEAT2	0.015415	0.001478	0.004802	-0.000179
	(10.873)	(1.807)	(3.334)	(-0.188)
LDAIRY2	0.008099	-0.001459	-0.000179	0.000282
	(6.565)	(-1.382)	(-0.188)	(0.114)
LNXRP	0.092022	0.000646	-0.162951	0.059507
	(3.429)	(0.057)	(-9.269)	(4.902)
LNXRP2	-0.010332	-0.000027	0.011156	-0.001852
	(-7.713)	(-0.048)	(12.709)	(-3.057)
CH06	0.015897	-0.001449	-0.008548	0.007865
	(22.435)	(-4.869)	(-18.404)	(24.542)
CH714	0.029121	-0.002749	-0.009821	-0.007059
	(49.009)	(-11.018)	(-25.222)	(-26.272)
AGE	0.002133	-0.000049	-0.000713	-0.000648
	(29.385)	(-1.612)	(-14.981)	(-19.739)
DURBAN	-0.015416	-0.000465	0.004860	0.006222
	(-9.073)	(-0.652)	(4.361)	(8.094)
DAGIND	0.039231	0.007097	-0.012529	-0.017058
	(21.892)	(9.431)	(-10.671)	(-21.048)
REG1	0.038932	0.000677	-0.013120	-0.001150
	(10.220)	(0.418)	(-5.228)	(-0.660)
REG2	0.060403	0.010293	-0.005227	-0.001928
	(13.396)	(5.261)	(-1.789)	(-0.837)
REG3	0.051629	-0.006690	-0.004769	0.000239
	(16.167)	(-4.927)	(-2.351)	(0.151)
REG4	0.065589	-0.013864	-0.030270	-0.006366
	(22.884)	(-11.066)	(-16.339)	(-4.128)
REG5	0.073528	-0.006168	-0.064760	-0.003101
	(19.642)	(-3.893)	(-26.461)	(-1.762)
REG6	0.124438	-0.023763	-0.070594	-0.008840
	(36.809)	(-16.576)	(-31.876)	(-5.679)
REG7	0.018719	-0.028418	-0.028647	-0.007313
	(4.709)	(-16.392)	(-11.109)	(-3.953)
REG8	0.108674	-0.024713	-0.054630	-0.010748
	(25.228)	(-13.497)	(-19.775)	(-5.350)
REG9	0.110216	-0.005048	-0.077491	-0.011966
	(24.694)	(-2.644)	(-26.744)	(-5.715)
REG10	0.092014	-0.008588	-0.054221	-0.011597
	(24.244)	(-5.365)	(-21.629)	(-6.704)
REG11	0.055259	-0.004489	-0.044060	-0.011965
	(15.504)	(-2.825)	(-18.712)	(-6.251)
REG12	0.089409	-0.006432	-0.043906	-0.009286
	(18.916)	(-3.209)	(-14.184)	(-4.171)
CAR	0.076168	0.007227	0.005921	-0.001046
	(14.091)	(3.167)	(1.671)	(-0.416)
ARMM	0.065833	-0.016025	-0.091126	-0.018888
	(13.583)	(-7.756)	(-28.549)	(-8.257)

TABLE 41

FOOD PRICE AND EXPENDITURE ELASTICITIES

	Price Elasticities					EXPENDITURE ELASTICITY
	CEREAL	FRUIT	MEAT	DAIRY	OTHER FOOD	
All Households						
Cereal	-0.87	0.02	0.09	0.05	0.30	0.66
Fruit	-0.04	-1.00	0.02	-0.02	0.03	1.00
Meat	-0.05	-0.03	-1.02	-0.04	-0.17	1.52
Dairy	0.01	-0.05	-0.04	-1.02	-0.00	1.34
Other Food	-0.06	0.01	-0.06	0.02	-0.87	1.20
Urban Households						
Cereal	-0.89	0.01	0.09	0.04	0.28	0.64
Fruit	-0.06	-1.00	0.01	-0.10	0.08	1.00
Meat	-0.05	-0.04	-1.02	-0.03	-0.19	1.46
Dairy	-0.03	-0.10	-0.02	-1.02	0.06	1.24
Other Food	-0.03	0.02	-0.05	0.06	-1.00	1.06
Rural Households						
Cereal	-0.91	0.01	0.05	0.04	0.36	0.73
Fruit	-0.10	-1.00	0.01	0.01	0.01	1.02
Meat	-0.11	-0.04	-0.90	-0.05	-0.16	1.55
Dairy	-0.02	-0.03	-0.10	-1.11	0.11	1.50
Other Food	-0.01	0.00	-0.10	-0.01	-1.00	1.10

Agricultural Households						
Cereal	-1.00	0.02	0.10	0.04	0.31	0.74
Fruit	-0.02	-1.00	0.02	-0.01	0.00	1.00
Meat	0.02	-0.02	-0.94	-0.02	-0.23	1.53
Dairy	0.02	-0.10	-0.04	-1.04	-0.01	1.61
Other Food	-0.10	0.00	-0.10	-0.03	-0.80	1.12
Surplus Households						
Cereal	-1.00	0.02	0.10	0.05	0.30	0.70
Fruit	-0.03	-1.00	0.01	-0.01	1.02	1.00
Meat	-0.01	-0.04	-1.05	-0.05	-0.17	1.52
Dairy	0.02	-0.05	-0.10	-1.03	0.00	1.35
Other Food	-0.10	0.01	-0.05	-0.02	-0.86	1.10
Deficit Households						
Cereal	-0.90	0.01	0.06	0.04	0.40	0.65
Fruit	-0.10	-1.00	0.07	-0.03	0.04	1.02
Meat	-0.15	-0.02	-1.00	-0.02	-0.16	1.55
Dairy	-0.02	-0.07	-0.02	-1.03	0.02	1.40
Other Food	-0.01	0.01	-0.10	-0.02	-0.92	1.10
Farm Households						
Cereal	-0.90	0.01	0.05	0.04	0.31	0.74
Fruit	-0.07	-1.00	0.01	0.01	0.04	1.01
Meat	-0.10	-0.03	-0.93	-0.02	-0.20	1.50
Dairy	0.04	-0.02	-0.04	-1.00	-0.12	1.50
Other Food	-0.10	0.01	-0.07	0.05	-0.82	1.11
Non-Agricultural Households						
Cereal						
Fruit	-1.00	0.02	0.11	0.05	0.35	0.63
Meat	-0.10	-1.00	0.04	-0.02	0.02	1.00
Dairy	-0.02	-0.02	-1.01	-0.05	-0.23	1.50
Other Food	-0.01	-0.04	-0.05	-1.02	0.03	1.24
	0.01	0.01	-0.10	-0.01	-1.00	1.10

TABLE 42

FOOD EXPENDITURE ELASTICITY ESTIMATES, 1991

Classification of Households	Cereals	Fruits/Vegs	Meat/Fish	Dairy/Eggs	Other Foods
All Households	0.661150	1.001171	1.516815	1.337760	1.084229
Urban	0.644316	1.000796	1.461164	1.244931	1.062878
Rural	0.733417	1.016344	1.547727	1.478494	1.090309
Agricultural	0.741013	1.002135	1.526547	1.611351	1.116396
Non-Agricultural	0.627822	0.998704	1.480573	1.238255	1.071259
Rural Households of Size					
less than 3	0.631842	1.093632	1.662357	1.714287	1.077939
from 3 to 5	0.647547	1.012504	1.648119	1.537940	1.114413
from 6 to 10	0.643306	1.037604	1.695213	1.573981	1.190780
more than 10	0.778530	0.654309	1.882567	1.615539	1.062827
Rural Households from					
low income group	0.819760	1.002433	1.390588	1.510631	1.101982
middle income group	0.764379	1.043828	1.367128	1.279242	1.108692
high income group	0.684906	0.987258	1.366099	1.127427	1.083371
Deficit Households	0.648328	1.021503	1.547911	1.379508	1.092603
Surplus Households	0.654735	0.990466	1.518183	1.345880	1.084210
Farm Households	0.739531	1.009262	1.491421	1.500713	1.112070

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TABLE 43

SIMULATION RESULTS OF 10% INCREASE IN PRICES (*)

Classification of Households	Change in Commodity Demand for			
	Cereals	Fruits/Vegs	Meat/Fish	Dairy/Eggs
All Households	0.041920	0.100050	0.130920	0.111090
Urban	0.046210	0.100040	0.132240	0.109230
Rural	0.046140	0.100750	0.124430	0.112230
Agricultural	0.044910	0.100100	0.120600	0.113580
Non-Agricultural	0.043570	0.099940	0.133520	0.109040
Rural Households of Size				
less than 3	0.031300	0.104830	0.132480	0.116610
from 3 to 5	0.032480	0.100590	0.130870	0.114810
from 6 to 10	0.022930	0.101620	0.128100	0.113610
more than 10	0.052060	0.085480	0.135610	0.115820
Rural Households from				
low income group	0.059230	0.100110	0.112890	0.109950
middle income group	0.053570	0.102000	0.116790	0.107610
high income group	0.052820	0.099430	0.126690	0.104730
Deficit Households	0.038040	0.101010	0.131380	0.112190
Surplus Households	0.041410	0.000433 **	0.131480	0.111450
Farm Households	0.045850	0.100460	0.122130	0.112100

* All figures cited are negative except
** demand for fruits/vegs of surplus hh

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TABLE 44

SIMULATION RESULTS OF 10% DECREASE IN PRICES ACCOMPANIED BY 5% INCREASE IN INCOME

Classification of Households	Income Elasticity	Change in Commodity Demand for				
		Cereals	Fruits/Vegs	Meat/Fish	Dairy/Eggs	Other Food
All Households	0.793490	0.068145	0.139775	0.191101	0.164169	0.143016
Urban	0.788754	0.071618	0.139506	0.189865	0.158323	0.141917
Rural	0.794455	0.075263	0.141122	0.185912	0.170963	0.143310
Agricultural	0.834446	0.075830	0.141912	0.184290	0.180814	0.146579
Non-Agricultural	0.775472	0.067909	0.138665	0.190924	0.157049	0.141537
Rural Households of Size						
less than 3	0.617905	0.050824	0.138617	0.183842	0.169577	0.133303
from 3 to 5	0.791814	0.058112	0.140680	0.196124	0.175697	0.144120
from 6 to 10	0.783333	0.048130	0.142256	0.194501	0.175263	0.146639
more than 10	0.795557	0.083030	0.111508	0.210494	0.180084	0.142277
Rural Households from						
low income group	0.865473	0.094703	0.143492	0.173065	0.175320	0.147687
middle income group	0.812464	0.084621	0.144405	0.172326	0.159575	0.145039
high income group	0.726424	0.077699	0.135292	0.176310	0.145684	0.139349
Deficit Households	0.772581	0.063089	0.140465	0.191178	0.165476	0.142206
Surplus Households	0.797624	0.067525	0.039068	0.192029	0.165129	0.143240
Farm Households	0.813025	0.075917	0.141484	0.182754	0.173107	0.145207

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DEFINITION OF VARIABLES

LNX	-	log (food expenditure) stone price index for food
LCEREAL2	-	log (price of rice & other cereals)
LFRUIT2	-	log (price of fruits & vegetables)
LMEAT2	-	log (price of meat & fish)
LDAIRY2	-	log (price of dairy products & eggs)
LOTFOD2	-	log (price of other food items)
LNNFOD2	-	log (price of non-food items)
LNTX	-	log (total expenditure) - overall stone price index
LNTX2	-	$(LNTX)^2$
CH06	-	number of children aged 0 to 6
CH714	-	number of children aged 7 to 14
SINGLE	-	dummy variable; 1 if household head is single
MARRIED	-	dummy variable; 1 if household head is married
AGE	-	age of household head
NREL	-	number of non-relatives in the household
EDUC1	-	dummy variable; 1 if household head completed elementary
EDUC2	-	dummy variable; 1 if household head attended high school
EDUC3	-	dummy variable; 1 if household head attended college
EDUC4	-	dummy variable; 1 if household head graduated from college
TOTEMP	-	total number of employed household members
DURBAN	-	dummy variable; 1 if urban
DAGIND	-	dummy variable; 1 if household is classified as agricultural
CREALS	-	share of rice & cereals in food expenditure

ANNEXES

Annex 1a

Real Expenditure Function, Urban Households
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-3.245762	-9.361
LCEREAL2	-0.192095	-21.900
LFRUIT2	-0.054408	-6.147
LMEAT2	-0.095285	-10.839
LDAIRY2	-0.084960	-4.794
LOTFOD2	-0.207901	-13.785
LNNFOD2	0.391993	32.140
LNTX	1.660669	27.094
LNTX2	-0.040149	-14.263
CH06	0.034356	19.430
CH714	0.030223	18.741
SINGLE	-0.025649	-2.141
MARRIED	0.025031	3.870
NREL	-0.009641	-2.330
EDUC1	0.015984	2.318
EDUC2	0.029838	4.668
EDUC3	-0.039493	-6.338
EDUC4	-0.102524	-12.521
TOTEMP	0.032921	16.933
REG1	-0.052081	-3.815
REG2	-0.087422	-5.159
REG3	-0.031291	-3.080
REG4	-0.052737	-5.389
REG5	-0.043999	-3.404
REG6	-0.080715	-7.605
REG7	-0.041639	-2.785
REG8	-0.031884	-2.206
REG9	-0.024797	-1.634
REG10	-0.075677	-6.459
REG11	-0.068366	-5.783
REG12	-0.114953	-7.380
CAR	-0.025817	-1.493
ARMM	-0.137231	-7.411
DAGIND	0.050273	8.545
Adjusted R-Squared	*0.8804*	
F [33, 12959]	*2898.414*	

Parameter Estimates of the QUAIDS, Urban Households
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	1.147278	-0.032058	0.238884	-0.557747
	(6.823)	(-0.461)	(1.900)	(-6.432)
LCEREAL2	0.000604	-0.005918	0.012875	0.003683
	(0.161)	(-4.046)	(5.792)	(1.929)
LFRUIT2	-0.005918	0.002390	0.000919	-0.005079
	(-4.046)	(1.475)	(0.725)	(-3.074)
LMEAT2	0.012875	0.000919	0.005754	0.001326
	(5.792)	(0.725)	(2.280)	(0.817)
LDAIRY2	0.003683	-0.005079	0.001326	0.000169
	(1.929)	(-3.074)	(0.817)	(0.044)
LNXRP	-0.086637	0.031391	-0.088694	0.105922
	(-2.629)	(2.318)	(-3.601)	(6.351)
LNXRP2	-0.001024	-0.001531	0.007488	-0.004276
	(-0.631)	(-2.295)	(6.172)	(-5.207)
CH06	0.007851	-0.001968	-0.005925	0.013133
	(10.034)	(-6.118)	(-10.124)	(33.157)
CH714	0.025784	-0.002366	-0.008692	-0.006298
	(35.541)	(-7.935)	(-16.021)	(-17.149)
DAGIND	0.046670	0.002927	-0.011692	-0.019059
	(18.406)	(2.809)	(-8.812)	(-14.854)
REG1	0.059372	0.000189	-0.024013	-0.006258
	(12.757)	(0.097)	(-6.880)	(-2.623)
REG2	0.052957	0.012191	-0.005282	-0.003930
	(8.136)	(4.398)	(-1.099)	(-1.083)
REG3	0.046745	-0.005762	-0.003152	-0.005995
	(12.735)	(-3.734)	(-1.217)	(-2.906)
REG4	0.058479	-0.016780	-0.025177	-0.007814
	(18.554)	(-11.906)	(-10.937)	(-3.814)
REG5	0.090148	-0.010361	-0.060802	-0.005929
	(18.414)	(-5.088)	(-16.644)	(-2.293)
REG6	0.122528	-0.025376	-0.078940	-0.011634
	(30.362)	(-15.036)	(-26.150)	(-5.550)
REG7	0.021524	-0.023626	-0.018035	-0.004113
	(4.537)	(-11.514)	(-5.186)	(-1.656)
REG8	0.126997	-0.021806	-0.062087	-0.017270
	(21.772)	(-8.946)	(-14.577)	(-5.695)
REG9	0.125499	-0.010268	-0.089574	-0.013639
	(21.630)	(-4.187)	(-20.857)	(-4.472)
REG10	0.093454	-0.004393	-0.054002	-0.010779
	(20.583)	(-2.341)	(-15.785)	(-4.649)
REG11	0.064063	-0.003252	-0.043654	-0.013228
	(15.241)	(-1.711)	(-13.791)	(-5.578)
REG12	0.106648	-0.004317	-0.048321	-0.007255
	(17.288)	(-1.681)	(-10.563)	(-2.223)
CAR	0.065481	0.015475	0.007950	-0.008972
	(9.688)	(5.519)	(1.572)	(-2.528)
ARMM	0.042492	-0.013075	-0.094026	-0.016283
	(5.756)	(-4.253)	(-16.986)	(-4.222)

Annex 2a

Real Expenditure Function, Rural Households
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-4.035310	-9.871
LCEREAL2	-0.224418	-37.902
LFRUIT2	-0.050670	-8.135
LMEAT2	-0.068335	-13.093
LDAIRY2	0.000461	0.038
LOTFOD2	-0.191833	-19.855
LNNFOD2	0.323056	38.138
LNTX	1.827703	24.213
LNTX2	-0.049760	-13.773
CH06	0.030096	13.784
CH714	0.034610	19.673
SINGLE	-0.029487	-1.872
MARRIED	0.041993	5.284
AGE	0.000550	2.321
NREL	-0.012626	-1.692
EDUC1	-0.014576	-1.904
EDUC2	0.035194	4.199
EDUC3	-0.034440	-4.950
EDUC4	-0.103696	-8.015
TOTEMP	0.021884	9.135
REG3	0.039023	4.753
REG8	0.029106	3.134
REG11	0.059957	6.561
REG12	0.025945	2.190
ARMM	-0.016919	-1.547
DAGIND	0.043277	8.902
Adjusted R-Squared	*0.8894*	
F [25, 8573]	*2766.058*	

Parameter Estimates of the QUAIDS, Rural Households
(Absolute t-ratios in parantheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	-1.397648	-0.075545	0.677251	-0.143089
	(-5.571)	(-0.713)	(5.024	(-1.510)
LCEREAL2	-0.008062	-0.006705	0.010043	0.008853
	(2.244)	(-4.798)	(5.993)	(6.686)
LFRUIT2	-0.006705	0.003588	0.001259	0.000962
	(-4.798)	(2.488)	(1.233)	(0.824)
LMEAT2	0.010043	0.001259	0.014177	-0.001809
	(5.993)	(1.233)	(8.971)	(-1.744)
LDAIRY2	0.008853	0.000962	-0.001809	-0.004495
	(6.686)	(0.824)	(-1.744)	(-1.817)
LNXRP	0.435860	0.033118	-0.175085	0.022261
	(8.503)	(1.528)	(-6.354)	(1.159)
LNXRP2	-0.027610	-0.001606	0.011375	0.000112
	(-10.496)	(-1.444)	(8.038)	(0.113)
CH06	0.015636	-0.000704	-0.008453	0.004116
	(12.227)	(-1.310)	(-12.305)	(8.631)
CH714	0.030648	-0.003691	-0.010148	-0.007377
	(29.368)	(-8.423)	(-18.138)	(-18.942)
AGE	0.002062	-0.000039	-0.000586	-0.000601
	(15.855)	(-0.705)	(-8.391)	(-12.372)
DAGIND	0.039941	0.010842	-0.013131	-0.015795
	(14.880)	(9.617)	(-9.117)	(-15.770)
REG3	-0.023806	-0.001798	0.033396	0.012265
	(-5.086)	(-0.913)	(13.257)	(6.950)
REG8	0.015593	-0.018816	-0.009755	-0.002002
	(2.933)	(-8.392)	(-3.430)	(-0.996)
REG11	-0.030978	0.008061	0.004507	-0.001830
	(-6.011)	(3.652)	(1.627)	(-0.928)
REG12	0.003370	0.004549	0.008182	-0.004909
	(0.502)	(1.614)	(2.272)	(-1.935)
ARMM	0.002498	-0.005939	-0.043098	-0.013536
	(0.410)	(-2.315)	(-13.158)	(-5.883)

Annex 3a

Real Expenditure Function, Agricultural households
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-4.180576	-8.913
LCEREAL2	-0.219190	-31.242
LFRUIT2	-0.046752	-6.028
LMEAT2	-0.070607	-10.113
LDAIRY2	0.007126	0.453
LOTFOD2	-0.206148	-15.014
LNNFOD2	0.299397	31.435
LNTX	1.892434	21.562
LNTX2	-0.051515	-12.163
CH06	0.024828	11.429
CH714	0.027209	15.312
SINGLE	-0.031828	-1.796
MARRIED	0.031622	3.570
AGE	0.000546	2.290
NREL	-0.009967	-1.109
EDUC1	-0.011963	-1.533
EDUC2	0.032963	3.596
EDUC3	-0.030276	-4.091
EDUC4	-0.120305	-5.586
TOTEMP	0.014898	5.879
REG1	-0.114882	-3.086
REG2	-0.119903	-3.206
REG3	-0.112047	-3.069
REG4	-0.111847	-3.083
REG5	-0.114507	-3.130
REG6	-0.135187	-3.741
REG7	-0.064474	-1.739
REG8	-0.087950	-2.379
REG9	-0.120050	-3.213
REG10	-0.127977	-3.507
REG11	-0.058330	-1.604
REG12	-0.143090	-3.861
CAR	-0.108865	-2.809
ARMM	-0.162998	-4.398
DURBAN	-0.006877	-1.440
Adjusted R-Squared	*0.9022*	
F [34, 6944]	*1894.853*	

Annex 3b

Parameter Estimates of the QUAIDS, Agricultural Households
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	-0.744117	0.251464	0.491094	0.008537
	(-2.433)	(1.894)	(3.350)	(0.082)
LCEREAL2	0.003830	-0.002262	0.018753	0.012458
	(0.863)	(-1.247)	(9.797)	(8.072)
LFRUIT2	-0.002262	0.001089	0.001658	-0.000579
	(-1.247)	(0.532)	(1.225)	(-0.389)
LMEAT2	0.018753	0.001658	0.007835	0.000413
	(9.797)	(1.225)	(4.197)	(0.331)
LDAIRY2	0.012458	-0.000579	0.000413	-0.000573
	(8.072)	(-0.389)	(0.331)	(-0.181)
LNXRP	0.275237	-0.031611	-0.127706	-0.018182
	(4.390)	(-1.162)	(-4.250)	(-0.859)
LNXRP2	-0.019699	0.001626	0.008633	0.002318
	(-6.119)	(1.164)	(5.595)	(2.132)
CH06	0.015639	-0.000554	-0.005770	0.002894
	(11.114)	(-0.908)	(-8.558)	(6.090)
CH714	0.032188	-0.003713	-0.009493	-0.006839
	(27.578)	(-7.339)	(-16.990)	(-17.353)
AGE	0.002043	-0.000010	-0.000285	-0.000614
	(13.993)	(-0.154)	(-4.073)	(-12.456)
DURBAN	-0.009799	-0.005208	-0.000458	0.004859
	(-3.186)	(-3.902)	(-0.310)	(4.674)
REG1	0.055102	0.008936	-0.018356	-0.000027
	(2.328)	(0.869)	(-1.616)	(-0.003)
REG2	0.082019	0.030201	-0.009288	-0.003451
	(3.476)	(2.941)	(-0.821)	(-0.427)
REG3	0.077419	0.006723	-0.004630	0.004348
	(3.325)	(0.665)	(-0.415)	(0.549)
REG4	0.109858	0.004113	-0.056378	-0.010898
	(4.748)	(0.409)	(-5.084)	(-1.383)
REG5	0.089925	0.006957	-0.075243	-0.007007
	(3.853)	(0.687)	(-6.727)	(-0.887)
REG6	0.152981	-0.013689	-0.070082	-0.013613
	(6.610)	(-1.363)	(-6.316)	(-1.739)
REG7	0.059578	-0.021292	-0.058304	-0.016829
	(2.512)	(-2.059)	(-5.119)	(-2.091)
REG8	0.118269	-0.014061	-0.059570	-0.016679
	(5.020)	(-1.374)	(-5.279)	(-2.087)
REG9	0.113684	0.010713	-0.067773	-0.021068
	(4.815)	(1.044)	(-5.986)	(-2.628)
REG10	0.113790	0.005947	-0.058685	-0.017604
	(4.882)	(0.588)	(-5.247)	(-2.234)
REG11	0.079142	0.009806	-0.050619	-0.014819
	(3.421)	(0.973)	(-4.557)	(-1.883)
REG12	0.117843	0.007221	-0.045446	-0.013160
	(5.002)	(0.705)	(-4.020)	(-1.647)
CAR	0.107884	0.011652	0.000538	-0.003392
	(4.368)	(1.087)	(0.045)	(-0.406)
ARMM	0.090276	-0.002879	-0.095505	-0.024733
	(3.863)	(-0.283)	(-8.517)	(-3.112)

Annex 4a

Real Expenditure Function, Non-Agricultural Households
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-2.672064	-8.088
LCEREAL2	-0.191740	-23.005
LFRUIT2	-0.057991	-7.854
LMEAT2	-0.091005	-12.917
LDAIRY2	-0.101512	-6.113
LOTFOD2	-0.197437	-15.528
LNNFOD2	0.417229	38.474
LNTX	1.540230	26.088
LNTX2	-0.035210	-12.973
CH06	0.036907	21.312
CH714	0.034133	21.960
SINGLE	-0.021665	-1.914
MARRIED	0.029458	4.855
NREL	-0.010156	-2.523
EDUC1	0.012088	1.826
EDUC2	0.028796	4.694
EDUC3	-0.041125	-6.830
EDUC4	-0.100633	-12.822
TOTEMP	0.034755	18.681
REG1	-0.033774	-2.765
REG2	-0.082194	-5.758
REG3	-0.013503	-1.548
REG4	-0.058358	-6.916
REG5	-0.044302	-4.092
REG6	-0.053432	-5.799
REG7	-0.071529	-5.436
REG8	-0.018635	-1.552
REG10	-0.059448	-5.352
REG11	-0.068402	-5.979
REG12	-0.064464	-4.044
CAR	-0.024818	-1.591
ARMM	-0.081989	-4.224
DURBAN	0.009894	2.117
Adjusted R-Squared	*0.8746*	
F [32, 14580]	*3185.210*	

FRUITS	-	share of fruits and vegetables in food expenditure
MEATS	-	share of fish & meat in food expenditure
DAIRYS	-	share of dairy products & eggs in food expenditure
OTFODS	-	share of other food items in food expenditure
REG1 - REG12; CAR; ARMM	-	dummy variable; 1 if region is

Parameter Estimates of the QUAIDS, Non-Agricultural Households
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	1.059792	0.047604	0.142901	-0.537049
	(6.498)	(0.736)	(1.192)	(-6.500)
LCEREAL2	-0.022157	-0.005005	0.016896	0.005099
	(-6.220)	(-3.814)	(8.541)	(2.909)
LFRUIT2	-0.005005	0.001020	0.003467	-0.001576
	(-3.814)	(0.786)	(3.470)	(-1.131)
LMEAT2	0.016896	0.003467	0.007901	-0.001416
	(8.541)	(3.470)	(3.890)	(-1.077)
LDAIRY2	0.005099	-0.001576	-0.001416	-0.000130
	(2.909)	(-1.131)	(-1.077)	(-0.037)
LNXRP	-0.047656	0.010772	-0.080550	0.100345
	(-1.485)	(0.850)	(-3.416)	(6.276)
LNXRP2	-0.003192	-0.000533	0.007224	-0.004027
	(-2.016)	(-0.852)	(6.207)	(-5.103)
CH06	0.007480	-0.001595	-0.005992	0.013160
	(9.699)	(-5.235)	(-10.567)	(34.239)
CH714	0.025839	-0.002171	-0.009030	-0.006662
	(36.631)	(-7.792)	(-17.410)	(-18.949)
DURBAN	-0.026203	0.002974	0.012620	0.008054
	(-12.515)	(3.598)	(8.210)	(7.720)
REG1	0.034425	0.004091	-0.004429	-0.004582
	(8.173)	(2.417)	(-1.427)	(-2.148)
REG2	0.034170	0.005451	0.010221	-0.004790
	(6.032)	(2.368)	(2.489)	(-1.527)
REG3	0.022421	-0.005797	0.007139	-0.003152
	(6.612)	(-4.301)	(3.012)	(-1.718)
REG4	0.034544	-0.014219	-0.010690	-0.006722
	(11.735)	(-11.574)	(-5.057)	(-3.682)
REG5	0.062698	-0.004709	-0.051860	-0.005587
	(14.231)	(-2.678)	(-16.080)	(-2.439)
REG6	0.102861	-0.019324	-0.061961	-0.009915
	(26.647)	(-12.553)	(-21.943)	(-5.080)
REG7	0.013678	-0.024254	-0.008662	-0.006272
	(2.966)	(-12.863)	(-2.659)	(-2.661)
REG8	0.095331	-0.021022	-0.040261	-0.009901
	(18.224)	(-10.137)	(-10.743)	(-3.746)
REG10	0.091757	-0.007400	-0.046590	-0.010996
	(19.743)	(-4.049)	(-13.790)	(-4.743)
REG11	0.049295	-0.002845	-0.131302	-0.011564
	(11.088)	(-1.524)	(-9.705)	(-4.792)
REG12	0.085766	-0.004164	-0.041147	-0.009793
	(12.970)	(-1.590)	(-8.688)	(-2.842)
CAR	0.055509	0.013304	0.017187	-0.003211
	(8.871)	(5.339)	(3.735)	(-0.991)
ARMM	0.053972	-0.014454	-0.085746	-0.015586
	(6.475)	(-4.371)	(-13.991)	(-3.711)

Annex 5a

Real Expenditure Function, Surplus Households
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-2.994299	-10.465
LCEREAL2	-0.212633	-32.565
LFRUIT2	-0.045312	-7.037
LMEAT2	-0.077663	-12.139
LDAIRY2	-0.032887	-2.314
LOTFOD2	-0.188016	-17.027
LNNFOD2	0.358569	37.115
LNTX	1.597941	31.265
LNTX2	-0.037527	-15.747
CH06	0.033421	19.745
CH714	0.030836	21.846
SINGLE	-0.016583	-1.519
MARRIED	0.036361	6.205
AGE	0.000276	1.500
NREL	-0.005628	-1.448
EDUC1	-0.001575	-0.261
EDUC2	0.034419	5.825
EDUC3	-0.043723	-8.107
EDUC4	-0.113397	-15.039
TOTEMP	0.031826	18.297
REG1	-0.080087	-7.030
REG2	-0.080693	-6.205
REG3	-0.056211	-6.232
REG4	-0.068838	-8.022
REG5	-0.070073	-6.768
REG6	-0.091353	-9.807
REG7	-0.057455	-5.069
REG8	-0.039681	-3.462
REG9	-0.043131	-3.567
REG10	-0.068724	-6.793
REG11	-0.043348	-4.273
REG12	-0.073898	-5.859
CAR	-0.059513	-4.082
ARMM	-0.117650	-9.111
DAGIND	0.048437	10.717
DURBAN	0.000911	0.225
Adjusted R-Squared	*0.8973*	
F [35, 15831]	*3960.067*	

Parameter Estimates of the QUAIDS, Surplus Households
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	0.247169	0.094938	0.541425	-0.358956
	(1.610)	(1.522)	(5.414)	(-5.122)
LCEREAL2	0.002536	-0.002990	0.019718	0.009177
	(0.812)	(-2.518)	(11.857)	(6.462)
LFRUIT2	-0.002990	0.001005	0.000716	-0.000919
	(-2.518)	(0.800)	(0.747)	(-0.747)
LMEAT2	0.019718	0.000716	0.001937	-0.001539
	(11.857)	(0.747)	(1.112)	(-1.340)
LDAIRY2	0.009177	-0.000919	-0.001539	-0.000346
	(6.462)	(-0.747)	(-1.340)	(-0.115)
LNXRP	0.070337	0.003962	-0.141365	0.067060
	(2.306)	(0.321)	(-7.120)	(4.898)
LNXRP2	-0.009320	-0.000240	0.010156	-0.002196
	(-6.115)	(-0.390)	(10.232)	(-3.209)
CH06	0.016040	-0.001466	-0.008831	0.008274
	(19.107)	(-4.319)	(-16.149)	(21.959)
CH714	0.028855	-0.002257	-0.010035	-0.007295
	(40.952)	(-7.922)	(-21.863)	(-23.065)
AGE	0.002197	0.000041	-0.000763	-0.000690
	(26.017)	(-1.192)	(-13.867)	(-18.197)
DAGIND	0.043155	0.006378	-0.013501	-0.018586
	(20.655)	(7.553)	(-9.927)	(-19.820)
REG1	0.048430	0.000519	-0.014308	-0.003405
	(10.946)	(0.287)	(-4.945)	(-1.698)
REG2	0.070063	0.005083	-0.003349	-0.004295
	(13.517)	(2.342)	(-1.001)	(-1.623)
REG3	0.053532	-0.007943	-0.003898	0.000420
	(14.465)	(-5.238)	(-1.670)	(0.230)
REG4	0.071089	-0.014157	-0.030300	-0.006792
	(21.898)	(-10.297)	(-14.501)	(-3.843)
REG5	0.077584	-0.004739	-0.064644	-0.003500
	(17.912)	(-2.684)	(-22.973)	(-1.726)
REG6	0.128462	-0.023538	-0.070586	-0.010115
	(31.503)	(-14.124)	(-26.548)	(-5.430)
REG7	0.024123	-0.030170	-0.030636	-0.009289
	(5.364)	(-15.954)	(-10.547)	(-4.463)
REG8	0.110100	-0.024734	-0.055399	-0.012169
	(21.750)	(-11.941)	(-17.136)	(-5.201)
REG9	0.120177	-0.007252	-0.080314	-0.014261
	(23.493)	(-3.433)	(-24.281)	(-5.973)
REG10	0.100242	-0.008144	-0.057691	-0.012641
	(22.383)	(-4.472)	(-19.588)	(-6.230)
REG11	0.060382	-0.005411	-0.047954	-0.013555
	(14.721)	(-3.062)	(-17.745)	(-6.707)
REG12	0.094613	-0.006801	-0.047239	-0.008418
	(16.993)	(-2.989)	(-13.016)	(-3.241)
CAR	0.075779	0.006044	0.007907	-0.002529
	(12.041)	(2.359)	(1.928)	(-0.863)
ARMM	0.076062	-0.014786	-0.091172	-0.022232
	(14.138)	(-6.689)	(-25.890)	(-8.766)

Annex 6a

Real Expenditure Function, Deficit Households
(dependent variable=ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-3.469424	-6.598
LCEREAL2	-0.196768	-16.385
LFRUIT2	-0.059192	-5.383
LMEAT2	-0.092271	-10.032
LDAIRY2	-0.063656	-2.993
LOTFOD2	-0.213340	-10.666
LNNFOD2	0.352655	27.857
LNTX	1.771617	19.000
LNTX2	-0.046751	-10.795
CH06	0.029786	10.864
CH714	0.032181	14.157
SINGLE	-0.045883	-2.246
MARRIED	0.021408	2.087
AGE	0.000024	0.077
NREL	-0.024775	-2.737
EDUC1	0.014797	1.510
EDUC2	0.023980	2.452
EDUC3	-0.025331	-2.835
EDUC4	-0.051479	-3.642
TOTEMP	0.023622	6.889
REG1	-0.044384	-2.459
REG2	-0.098991	-4.612
REG3	-0.019413	-1.273
REG4	-0.063623	-4.245
REG5	-0.071818	-4.148
REG6	-0.091297	-6.201
REG7	-0.075921	-3.735
REG8	-0.051698	-2.760
REG9	-0.067432	-3.138
REG10	-0.113114	-6.665
REG11	-0.066856	-3.909
REG12	-0.116395	-5.506
CAR	-0.034522	-1.469
ARMM	-0.048209	-1.833
DAGIND	0.036981	5.155
DURBAN	0.012927	1.935
Adjusted R-Squared	*0.8805*	
F [35, 5687]	*1205.615*	

Parameter Estimates of the QUAIDS, Deficit Households
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	-0.136085	0.168893	1.026425	-0.224026
	(-0.466)	(1.261)	(5.300)	(-1.636)
LCEREAL2	-0.004150	-0.006457	0.005470	0.007371
	(-0.745)	(-2.767)	(1.971)	(2.864)
LFRUIT2	-0.006457	0.001810	0.003610	-0.002528
	(-2.767)	(0.766)	(2.269)	(-1.212)
LMEAT2	0.005470	0.003610	0.011406	0.001595
	(1.971)	(2.269)	(4.379)	(0.926)
LDAIRY2	0.007371	-0.002528	0.001595	-0.000205
	(2.864)	(-1.212)	(0.926)	(-0.046)
LNXRP	0.172528	-0.013004	-0.241543	0.037184
	(2.989)	(-0.492)	(-6.302)	(1.394)
LNXRP2	-0.014649	0.000742	0.015038	-0.000633
	(-5.106)	(0.565)	(7.893)	(-0.478)
CH06	0.015721	-0.001421	-0.007823	0.006680
	(11.822)	(-2.337)	(-8.854)	(10.878)
CH714	0.030619	-0.004130	-0.009404	-0.006909
	(27.556)	(-8.127)	(-12.744)	(-13.463)
AGE	0.002008	-0.000016	-0.000612	-0.000552
	(13.990)	(-0.243)	(-6.417)	(-8.333)
DAGIND	0.043128	0.007782	-0.013341	-0.018150
	(13.353)	(5.269)	(-6.221)	(-12.168)
REG1	0.035712	0.000556	-0.016094	-0.003578
	(4.829)	(0.162)	(-3.242)	(-1.032)
REG2	0.056343	0.024609	-0.017913	-0.006487
	(6.393)	(5.964)	(-3.130)	(-1.430)
REG3	0.057432	-0.003338	-0.009888	-0.006146
	(9.119)	(-1.151)	(-2.448)	(-1.943)
REG4	0.064455	-0.012554	-0.034948	-0.012759
	(10.916)	(-4.539)	(-9.130)	(-4.091)
REG5	0.082926	-0.009134	-0.070861	-0.011481
	(11.543)	(-2.765)	(-14.919)	(-3.351)
REG6	0.126700	-0.023999	-0.074004	-0.013041
	(20.539)	(-8.461)	(-18.283)	(-4.499)
REG7	0.017653	-0.022438	-0.027603	-0.006401
	(2.072)	(-5.569)	(-4.947)	(-1.587)
REG8	0.120480	-0.025470	-0.058818	-0.016227
	(14.886)	(-6.589)	(-11.342)	(-4.208)
REG9	0.098624	0.001920	-0.075265	-0.014553
	(11.011)	(0.464)	(-12.931)	(-3.416)
REG10	0.087741	-0.008765	-0.049021	-0.015507
	(12.175)	(-2.660)	(-10.230)	(-4.645)
REG11	0.055612	-0.000968	-0.038112	-0.010553
	(7.766)	(-0.281)	(-8.027)	(-2.994)
REG12	0.093874	-0.004373	-0.040120	-0.019129
	(10.489)	(-1.061)	(-6.795)	(-4.434)
CAR	0.095049	0.010941	-0.005134	-0.005608
	(9.069)	(2.277)	(-0.738)	(-1.142)
ARMM	0.054269	-0.022562	-0.112929	-0.020184
	(4.756)	(-4.290)	(-14.947)	(-3.729)

Real Expenditure Function, Farm Households
(dependent variable = ln x)

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-5.016445	-10.997
LCEREAL2	-0.228555	-28.126
LFRUIT2	-0.055944	-7.348
LMEAT2	-0.093257	-12.444
LDAIRY2	0.026164	1.434
LOTFOD2	-0.194551	-12.521
LNNFOD2	0.327860	33.218
LNTX	2.034459	24.291
LNTAX2	-0.058800	-14.755
CH06	0.030311	11.969
SINGLE	-0.046196	-2.348
MARRIED	0.055617	5.837
AGE	0.000307	1.141
EDUC1	-0.008537	-0.981
EDUC2	0.043525	4.474
EDUC3	-0.047013	-5.917
EDUC4	-0.098409	-5.869
TOTEMP	0.019834	7.184
REG1	-0.098898	-2.131
REG2	-0.129435	-2.763
REG3	-0.096735	-2.097
REG4	-0.119367	-2.598
REG5	-0.125199	-2.714
REG6	-0.163324	-3.549
REG7	-0.105121	-2.250
REG8	-0.102807	-2.208
REG9	-0.130313	-2.776
REG10	-0.124935	-2.705
REG11	-0.077746	-1.687
REG12	-0.146695	-3.140
CAR	-0.116463	-2.447
ARMM	-0.176826	-3.770
DAGIND	0.053440	8.848
Adjusted R-Squared	*0.8876*	
F [32,6822]	*1692.234*	

Parameter Estimates of the QUIADS, Farm Households
(Absolute t-ratios in parentheses)

Variable	Cereal	Fruit	Meat	Dairy
INTERCEPT	-0.919896	0.031788	0.555004	-0.218124
	(-3.197)	(2.472)	(3.815)	(-2.078)
LCEREAL2	0.006388	-0.006153	0.012472	0.011957
	(1.421)	(-3.657)	(6.193)	(7.181)
LFRUIT2	-0.006153	-0.000398	0.001537	0.001206
	(-3.357)	(-0.225)	(1.188)	(0.873)
LMEAT2	0.012472	0.001537	0.010132	0.000256
	(6.193)	(1.188)	(5.309)	(0.197)
LDAIRY2	0.011957	0.001206	0.000256	0.002468
	(7.181)	(0.873)	(0.197)	(0.724)
LNXRP	0.325035	-0.036993	-0.146203	0.027531
	(5.548)	(-1.413)	(-4.937)	(1.299)
LNXRP2	-0.022006	0.001925	0.009672	-0.000169
	(-7.361)	(1.441)	(6.399)	(-0.156)
CH06	0.013328	-0.000437	-0.007011	0.004464
	(9.230)	(-0.677)	(-9.606)	(8.548)
CH714	0.027890	-0.002920	-0.008274	-0.005971
	(24.403)	(-5.722)	(-14.322)	(-14.449)
AGE	0.001550	-0.000054	-0.000478	-0.000556
	(10.637)	(-0.825)	(-6.490)	(-10.558)
DURBAN	-0.006214	0.001437	0.003676	0.004474
	(-1.991)	(1.031)	(2.329)	(3.963)
DAGIND	0.023188	0.008195	-0.003119	-0.008387
	(7.015)	(5.552)	(-1.867)	(-7.012)
REG1	0.007090	-0.026192	0.024994	0.002647
	(0.271)	(-2.242)	(1.889)	(0.280)
REG2	0.027491	-0.015238	0.029456	0.007140
	(1.050)	(-1.301)	(2.225)	(0.745)
REG3	0.031444	-0.035235	0.032031	0.011436
	(1.212)	(-3.041)	(2.443)	(1.212)
REG4	0.059321	-0.032761	-0.014702	-0.003114
	(2.293)	(-2.835)	(-1.124)	(-0.331)
REG5	0.043618	-0.030187	-0.031077	0.001810
	(1.676)	(-2.597)	(-2.362)	(0.192)
REG6	0.099731	-0.050251	-0.022410	-0.000599
	(3.829)	(-4.317)	(-1.701)	(-0.064)
REG7	0.024869	-0.052566	-0.012724	-0.009222
	(0.939)	(-4.434)	(0.950)	(-0.961)
REG8	0.073484	-0.052161	-0.016017	-0.004987
	(2.797)	(-4.446)	(-1.207)	(-0.523)
REG9	0.066514	-0.024949	-0.030291	-0.009068
	(2.528)	(-2.122)	(-2.277)	(-0.949)
REG10	0.061301	-0.028012	-0.020628	-0.012374
	(2.352)	(-2.405)	(-1.564)	(-1.312)
REG11	0.032179	-0.031989	-0.008416	-0.007391
	(1.240)	(-2.753)	(-0.641)	(-0.783)
REG12	0.062773	-0.033454	-0.005625	-0.005583
	(2.390)	(-2.850)	(-0.423)	(-0.586)
CAR	0.066886	-0.028709	0.028362	0.005704
	(2.506)	(-2.408)	(2.102)	(0.589)
ARMM	0.046505	-0.037197	-0.047743	-0.016819
	(1.768)	(-3.164)	(-3.588)	(-1.758)