



2014 Costs & Returns of CASSAVA PRODUCTION

OCTOBER 2014



REPUBLIC OF THE PHILIPPINES
PHILIPPINE STATISTICS AUTHORITY

FOREWORD

The Philippine Statistics Authority (PSA) conducted Costs and Returns Survey (CRS) of Cassava Production in April 2014. The CRS is designed to generate data on the cost structure of cassava production, average usage of materials and labor inputs and measures of profitability of cassava farming. The study covers the six (6) major cassava producing provinces, namely, Camarines Sur, Bohol, Bukidnon, Basilan, Sulu and Lanao del Sur.

The costs and returns data contained in this report are presented by province. This report includes other socio-economic variables related to cassava production. The reference period of the survey is the last completed harvest within April 2013 to March 2014.

The PSA gratefully acknowledges the financial support provided by the National Rice Program of the Department of Agriculture (DA) for this activity. Further, the PSA deeply appreciates the cooperation of the respondents who were interviewed by the Contractual Data Collectors (CDCs) during the survey.

We welcome comments and suggestions from our various users for the improvement of our data system on cost of production.



ROMEO S. RECIDÉ

Interim Deputy National Statistician
Sectoral Statistics Office

TABLE OF CONTENTS

	Page
FOREWORD	i
TABLE OF CONTENTS	ii
LIST OF TABLES	iii
EXPLANATORY NOTES	vii
I. INTRODUCTION	1
A. Rationale	1
B. Objectives	2
II. SURVEY METHODOLOGY	2
A. Coverage	2
B. Reference Period	2
C. Sampling Frame	2
D. Sampling Design, Sample Size and Sample Selection Procedure	2
III. SURVEY OPERATIONS	3
A. Pre-survey Training	3
B. Data Collection	3
C. Supervision of Survey Operations	4
IV. DATA PROCESSING, DATA REVIEW AND ANALYSIS	4
V. HIGHLIGHTS OF THE FINDINGS	4
A. Characteristics of Cassava Farmers	4
B. Farm Characteristics	6
C. Farm Practices	7
D. Input Usage	10
E. Average Production Costs and Returns of Cassava	12
F. Other Information	18
STATISTICAL TABLES	24

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
1	Percentage distribution of cassava farmers by sex, selected provinces, April 2013 - March 2014	25
2	Average age percentage distribution of cassava farmers by age group, selected provinces, April 2013 - March 2014	25
3	Percentage distribution of cassava farmers by educational attainment, selected provinces, April 2013 - March 2014	26
4	Average farming experience of cassava farmers and percentage distribution by number of years engaged in cassava production, selected provinces, April 2013 - March 2014	26
5	Percentage distribution of cassava farmers by main occupation, selected provinces, April 2013 - March 2014	27
6	Average farm size, area planted and harvested of cassava farm parcels, selected provinces, April 2013 - March 2014	28
7	Percentage distribution of cassava farm parcels by tenurial status, selected provinces, April 2013 - March 2014	28
8	Percentage of cassava farmers by type of farm investment owned and used in cassava farm parcels, selected provinces, April 2013 - March 2014	29
9	Percentage distribution of cassava farmers by purpose of cassava planted, selected provinces, April 2013 - March 2014	30
10	Percentage of cassava farmers by source of planting materials, selected provinces, April 2013 - March 2014	30
11	Percentage distribution of cassava farmers by month of planting, selected provinces, May 2012 - June 2013	31
12	Percentage distribution of cassava farmers by month of harvesting, selected provinces, April 2013 - March 2014	31
13	Percentage of cassava farmers by type of labor used in land preparation, selected provinces, April 2013 - March 2014	32

14	Percentage of cassava farmers by method of weeding, selected provinces, April 2013 - March 2014	32
15	Percentage of cassava farmers by type of fertilizers used, selected provinces, April 2013 - March 2014	33
16	Percentage of cassava farmers by type of pesticides used, selected provinces, April 2013 - March 2014	33
17	Average quantity of planting materials used per hectare by mode of acquisition, selected provinces, April 2013 - March 2014	34
18	Average quantity of fertilizers applied per hectare by type, selected provinces, April 2013 - March 2014	34
19	Average quantity of fertilizer nutrients applied per hectare, selected provinces, April 2013 - March 2014	35
20	Average quantity of pesticides applied per hectare by type, selected provinces, April 2013 - March 2014	35
21	Average labor utilization per hectare of cassava production by source of labor, selected provinces, April 2013 - March 2014	36
22	Average labor utilization per hectare of cassava production by farm activity, selected provinces, April 2013 - March 2014	37
23	Average production costs and returns of cassava per hectare, selected provinces, April 2013 - March 2014	38
24	Average variable and fixed production costs of cassava, selected provinces, April 2013 - March 2014	40
25	Average production costs and returns of cassava per hectare, Camarines Sur, April 2013 - March 2014	41
26	Average variable and fixed production costs of cassava, Camarines Sur, April 2013 - March 2014	43
27	Average production costs and returns of cassava per hectare, Bohol, April 2013 - March 2014	44
28	Average variable and fixed production costs of cassava, Bohol, April 2013 - March 2014	45

29	Average production costs and returns of cassava per hectare, Bukidnon, April 2013 - March 2014	46
30	Average variable and fixed production costs of cassava, Bukidnon, April 2013 - March 2014	47
31	Average production costs and returns of cassava per hectare, Basilan, April 2013 - March 2014	48
32	Average variable and fixed production costs of cassava, Basilan, April 2013 - March 2014	49
33	Average production costs and returns of cassava per hectare, Lanao del Sur, April 2013 - March 2014	50
34	Average variable and fixed production costs of cassava, Lanao del Sur, April 2013 - March 2014	51
35	Average production costs and returns of cassava per hectare, Sulu, April 2013 - March 2014	52
36	Average variable and fixed production costs of cassava, Sulu, April 2013 - March 2014	53
37	Inter-provincial comparison of yield and inputs usage per hectare for cassava production, selected provinces, April 2013 - March 2014	54
38a	Inter-provincial comparison of average production costs and returns of cassava per hectare by major cost item, selected provinces, April 2013 - March 2014	54
38b	Inter-provincial comparison of profitability of cassava production per hectare, selected provinces, April 2013 - March 2014	55
39	Percentage distribution of cassava produce by disposition item, selected provinces, April 2013 - March 2014	55
40a	Percentage distribution of cassava farmers reporting on current level of production in comparison with the same period last year, selected provinces, 2013 - 2014	56
40b	Percentage of cassava farmers with higher volume of production this year by reason for change in production, selected provinces, 2013 - 2014	57

40c	Percentage of cassava farmers with lower volume of production this year by reason for change in production, selected provinces, 2013 - 2014	57
41	Percentage of cassava farmers reporting problems on production, selected provinces, April 2013 - March 2014	58
42	Percentage of cassava farmers who sold produce by major buyer, selected provinces, April 2013 - March 2014	58
43	Percentage of cassava farmers reporting problems on marketing of produce, selected provinces, April 2013 - March 2014	59
44	Percentage of cassava farmers who availed of loans for cassava production and by source of loan, selected provinces, April 2013 - March 2014	59
45a	Percentage of cassava farmers who were aware and availed of benefit from government programs/interventions in cassava production, selected provinces, April 2013 - March 2014	60
45b	Percentage of cassava farmers who received benefit from government programs/interventions on cassava production, selected provinces, April 2013 - March 2014	60
45c	Percentage of cassava farmers who used the benefit received and increased income, selected provinces, April 2013 - March 2014	61
46	Percentage of cassava farmers by perceived effect of climate change on their cassava farming, selected provinces, April 2013 - March 2014	61
47	Percentage of cassava farmers who were members of farmers' organization and by type of benefit received, selected provinces, April 2013 - March 2014	62
48	Percentage distribution of cassava farmers reporting on the plan of farm operations, selected provinces, April 2013 - March 2014	62
49	Percentage of cassava farmers reporting on the recommendations to further improve the cassava production, selected provinces, April 2013 - March 2014	63

EXPLANATORY NOTES

1. Average costs and returns of cassava production are computed and presented as follows:

$$\text{Per hectare} = \frac{\text{Total value of input or (output)}}{\text{Total harvest area in hectares}}$$

$$\text{Per farm} = \frac{\text{Total value of input or (output)}}{\text{Total number of farms}}$$

$$\text{Per kilogram} = \frac{\text{Total value of input or (output)}}{\text{Total production}}$$

2. Blank cells in the statistical tables indicate that there was no report for a particular data item.
3. Data may not add up to respective totals due to rounding off of figures.
4. Percentage is used for multiple responses and may not equal to 100 percent while percentage distribution is used for single response and should equal to 100 percent.
5. Concepts and definitions used in the report:

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

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

Imputed Costs – expenditures that do not involve actual outlays in cash or in kind. They represent the costs using owned resources in a particular activity. Valuation is attributed through the value of the best alternative uses given up for the purpose.

The cost items are as follows:

Planting materials– all types of seeds and/or seedlings used in the production.

Fertilizers – any substance, solid or liquid, inorganic or organic, natural or synthetic, single or combination of materials applied to the soil or on the plant to provide one or more of the essential elements to improve plant nutrition, growth, yield or quality, or for promoting a chemical change that enhances plant nutrition and growth.

Soil ameliorants - elements placed or mixed into the soil to replenish depleted soil nutrients for better plant growth.

Pesticides – all types of yield-protecting form of chemicals.

Hired labor– labor rendered by a person who is paid by the farm operator on the agreed basis of payment. Hired labor includes man or animal or machine or any combination with man-labor.

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

Land tax - amount of tax paid by the owner-operator for the farm land.

Rentals – payments for the use of land, machine, animal, tools and farm machineries.

Fuel and Oil – the costs incurred for the use of gasoline, oil, and other related inputs.

Transport costs of inputs - expenditures incurred in transporting farm inputs to the production sites.

Interest payment on crop loan- payment for the interest on borrowed capital used in the farm production.

Landowner's Share – portion of farmer's production that goes to the owner of farm land based on the agreed sharing system.

Repairs- costs incurred for all minor repairs and improvements made on the farm investments.

Food expenses - cash expenditures incurred in providing food to farm laborers.

Harvester's share – portion of farmer's production that serves as payment to farm laborers who perform the harvesting activities.

Operator labor - imputed wages as payment to labor contributed by the operator. Mandays of labor are valued at prevailing wage rate in the locality.

Family labor– labor rendered by the farmer's family members who take part in any production activities. Mandays of labor are valued at prevailing wage rate in the locality.

Exchange labor-work done by farm laborers in exchange (or as payment) to the work done by the farm operator/household members outside his/her own farm.

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

Interest on operating capital – cost of capital foregone for the purchase of seeds, fertilizers, chemicals and payment of wages for hired labor; this is derived by multiplying the total cash outlays by the prevailing lending rates.

Rental value of owned land– imputed cost which is derived by asking the farmer how much would be the annual value of the land if it will be rented.

Total Cost – refers to the sum of cash costs, non – cash costs and imputed costs.

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

Variable Costs – costs that change as output changes.

Gross Returns - the total value of production (derived by multiplying the total volume of produce by the price received by the farmer per kilogram).

Returns Above Cash Costs- returns after deducting the total cash outlays from the total cost of production.

Returns Above Cash and Non-Cash Costs- returns after subtracting the cash and non-cash costs from the total costs.

Net Returns – net profit after subtracting all expenses incurred in cassava production (gross returns–total costs).

Net Profit-Cost Ratio- determines the rate of return to the farmers (the amount earned by the farmer for every peso spent in the production).

Focus parcel - the particular farm parcel where the last harvest is completed within the reference period. All information collected for this survey refers to the focus parcel.

I. INTRODUCTION

A. Rationale

Cassava (*Manihot esculenta* Crantz) is locally known as “kamoteng-kahoy” or “balinghoy” in the Philippines. It is a starchy root vegetable with a variety of uses. Cassava as food is rich in carbohydrates, dietary fiber, vitamins and minerals. It is also used as a raw material in the manufacture of processed food, animal feed and industrial products.

Cassava production in the Philippines posted an average annual growth rate of 4.13 percent over the past ten (10) years from 2004 to 2013. The country produced 2,361,561 metric tons of cassava in 2013.

Food security and raising farmers’ income are the goals of the agriculture sector. To achieve these goals, the Department of Agriculture (DA) has launched the Food Staples Sufficiency Program (FSSP) 2011-2016. This is in pursuit of the country’s goal of food staple sufficiency. One of the farmer-centered innovations initiated by the FSSP is to diversify food staples consumption by intensifying the production of commodities other than rice and corn. Cassava is one of the non-rice staples under FSSP, as it is considered as one of the traditional staples in some areas of the country.

There is a growing demand for data on costs and returns of production. However, the conduct of Costs and Returns Survey has not yet been made a regular undertaking of the Philippine Statistics Authority (PSA) given its limited regular budget. With the funding support from the National Rice Program of the Department of Agriculture (D.A.), the PSA conducted the 2014 Costs and Returns Survey of Cassava Production.

B. Objectives

The general objective of the survey is to generate data on costs and returns of cassava production to be used as basis in updating the database on costs and returns. Specifically, the survey aims to:

- establish an up-to-date production costs structure;
- determine indicators of profitability such as gross and net returns, returns above cash cost, returns above cash and non-cash costs, etc.;
- come up with an updated data sets on average use of material and labor inputs; and,
- generate other related socio-economic variables.

II. SURVEY METHODOLOGY

A. Coverage

The 2014 Costs and Returns Survey of Cassava Production covered cassava farmers in the six (6) identified major producing provinces, namely, Camarines Sur, Bohol, Bukidnon, Lanao del Sur, Basilan and Sulu.

Particularly, cassava farmers who harvested cassava within the reference period and knowledgeable on the costs of producing cassava such as farm investments, material inputs, labor expenses incurred and the disposition of produce served as samples of the survey.

B. Reference Period

The reference period of the 2014 Costs and Returns Survey of Cassava Production was the last completed harvest within April 2013 to March 2014.

C. Sampling Frame

The lists of cassava producing barangays with cumulative share of 80 percent based on the total area planted in 2013 served as the sampling frame. The ranking of barangays was updated through interview of key informants such as Municipal Agricultural Officers (MAOs), Agricultural Technicians (ATs) and Barangay Officials.

D. Sampling Design, Sample Size and Sample Selection Procedure

The domain of the survey was the province. A two-stage sampling design was employed with the barangay as the primary sampling unit and the sample farmer as the secondary sampling unit. The top producing barangays were selected from an ordered list of barangays. The sample farmers were identified in each sample barangay using snowball approach during data collection.

The total number of sample barangays per province was fifteen or less. If the number of major producing barangays that contributed to 80 percent based on area planted were more than 15, 15 barangays were selected. Those provinces with less than 15 barangays that produced cassava were completely enumerated. This approach ensured representation of the barangays in the province in terms of area planted to cassava. The total number of sample farmers per province was set at 75 and equally allocated to the sample barangays. The list of sample barangays per province and corresponding number of samples were provided to the Provincial Operations Center (POC) prior to the survey.

During data collection, the names and addresses of cassava farmers residing in the barangay were obtained from the office of the barangay chairman or any other key informants in the barangay. It served as the data collector's starting point in searching for potential sample farmers. The target number of cassava farmers in the sample barangays was obtained using snowball sampling. A set of screening questions was applied to confirm if those listed actually harvested cassava during the reference period and satisfied the other criteria for enumeration.

Whether the interviewed farmer was qualified for the survey or not, he/she was asked to identify other cassava farmers in the barangay to be added in the initial list. The search continued, and the farmer who met the criteria specified in the screening questions was qualified as sample for the survey and was interviewed using the questionnaire for the 2014 Survey on Costs and Returns of Cassava Production. If the interview was successfully carried out (meaning, all the needed information had been supplied), the household number, full name and residential address of the sample farmer were written in the List of Sample Farmers. The enumerator selected again any farmer in the initial list as the next potential sample for the survey. The process continued until the required number of samples in the barangay was obtained.

III. SURVEY OPERATIONS

A. Pre-survey Training

Three (3) levels of training were conducted. This activity aimed to have uniform understanding of the survey concepts and procedures that were used during the survey operations.

The first level was the training of selected Central Office (C.O.) staff who served as trainers in the next level of training. The second level training was for the Provincial Agricultural Statistics Officers and selected staff of the six (6) provinces. They served as trainers for the third level training which was intended for Contractual Data Collectors (CDCs). They were trained on the survey concepts, survey procedures and on filling up the questionnaire.

B. Data Collection

The data collection was carried out by Contractual Data Collectors (CDCs) through personal (face-to-face) interview of the sample farmer in sample barangays using structured questionnaire.

C. Supervision of Survey Operations

Field supervision was conducted by POC staff. Among the tasks carried out by field supervisors were the conduct of spot checking during data collection to monitor the data collectors' work, back-checking the work of CDCs after data collection and the preparation of field supervision report.

IV. DATA PROCESSING, DATA REVIEW AND ANALYSIS

Editing and coding of survey returns were done at the Provincial Operations Centers (POCs) upon submission of the accomplished questionnaires by the CDCs. These activities were undertaken to ensure the quality of data that were collected.

A five (5) day training/workshop on data processing was conducted to facilitate the generation of survey results. It was attended by the Provincial Processing Officers (PPOs) or staff in-charge on Other Crops and selected staff of the Agricultural Accounts and Statistical Indicators Division (AASID).

The training/workshop covered data encoding, data review, cleaning and updating of flat files using MS Excel program developed by AASID. During the training/workshop, completeness check, consistency checks and accuracy checks were done to ensure quality of data. The output of the data review and cleaning was the final set of raw data file which was used for the generation of data tables. These data tables were validated and compared with the results of the 1998 Costs and Returns of Cassava Production and results of other relevant surveys.

V. HIGHLIGHTS OF THE FINDINGS

A. Characteristics of Cassava Farmers (Tables 1-5)

Sex, Age, Educational Attainment and Farming Experience

- Across the six (6) provinces covered in the survey, 84.67 percent of cassava farmers were males and 15.33 percent were females. All the sample cassava farmers in Lanao del Sur were males. In Sulu, male cassava farmers constituted 98.67 percent. Basilan had the biggest proportion of female cassava farmers at 41.33 percent.
- The average age of cassava farmers was 48 years old. The oldest group of farmers was registered in Bohol at an average age of 53 years. The youngest group was noted in Lanao del Sur at an average age of 40 years.

- By age group, cassava farmers in the age bracket of 41 to 50 years comprised the biggest group at 33.78 percent. About 27.11 percent belonged to age bracket 51 to 60 years old. Farmers aged more than 70 years old were only 1.33 percent. By province, Basilan had the biggest percentage of farmers at 49.33 percent who belonged to age bracket 41 to 50 years old. Cassava farmers in Lanao del Sur aged 31 to 40 years accounted for 38.67 percent. Those belonging to age bracket 51 to 60 years had higher proportion in Bohol and Bukidnon at 33.33 percent each.
- About 86.22 percent of cassava farmers had formal schooling while 13.78 percent had no schooling. Cassava farmers who were college degree holders comprised 4 percent. There were 34.89 percent of the cassava farmers who reached elementary level. Graduates of elementary and high school education were 18.44 percent and 11.11 percent, respectively. Among the provinces surveyed, Sulu had the biggest proportion at 56 percent who obtained elementary level. Those who graduated from elementary education had the highest proportion in Bohol at 44 percent and in Camarines Sur at 42.67 percent. Bukidnon registered the biggest percentages of cassava farmers who finished high school education at 25.33 percent and college education at 13.33 percent. Those with no schooling were higher in Basilan at 37.33 percent.
- On the average, cassava farmers had 13 years of experience in cassava farming. The longest farming experience of 18 years was noted in Sulu while the least was recorded in Basilan at nine (9) years. More than half or 52.44 percent of cassava farmers reported less than 11 years of farming experience. Those with 11 to 20 years of experience comprised 26.67 percent. About 6.89 percent had more than 30 years of experience in cassava production. Of the six (6) provinces covered in the survey, Basilan had the biggest proportion at 72 percent with less than 11 years of farming experience. Some 38.67 percent of cassava farmers in Sulu stated 11 to 20 years of experience. In Bohol, 17.33 percent had farming experience for more than 30 years.

Main Occupation

- The main occupation of 93.99 percent of the cassava farmers fell under the group of farmers, forestry workers and fishermen. In particular, 80.44 percent were field crop farmers; 12.44 percent, orchard farmers; 0.44 percent, livestock farmers; and 0.67 percent, fishermen. Laborers and unskilled workers accounted for 2.22 percent.
- By province, field crop farming was the main occupation of all sample cassava farmers in Sulu. The same occupation was stated by 98.67 percent in Lanao del Sur and 92 percent in Bukidnon. In Basilan, 37.33 percent were engaged in field crop farming and 56 percent were into orchard farming. Those whose main

occupation fell under the group of laborers and unskilled workers was higher in Camarines Sur at 8 percent.

B. Farm Characteristics (Tables 6-8)

Farm Size and Area Cultivated to Cassava

- The average size of farms operated by cassava farmers was 1.31 hectares. Across the provinces surveyed, the biggest farm size was recorded in Lanao del Sur with an average of 2.35 hectares. Bohol and Bukidnon had an average farm size of 1.82 hectares each. The smallest farm was noted in Camarines Sur with an average size of 0.38 hectare.
- During the reference period, the average area of focus parcel planted and harvested to cassava was the same at 0.94 hectare. By province, the area planted and harvested was biggest in Lanao del Sur at 2.17 hectares and smallest in Camarines Sur at 0.36 hectare. In Bukidnon, area planted and harvested averaged 1.14 hectares.

Tenurial Status

- In the six (6) provinces covered, 25.11 percent of cassava farm parcels were fully owned, 24.44 percent were tenanted, 24 percent were rent free and 15.33 percent were held in owner-like possession. The remaining 11.11 percent comprised of farm parcels that were leased/rented, amortized, held under CLT/CLOA and mortgaged.
- Basilan posted the biggest proportion of fully owned farm parcels at 45.33 percent. This was followed by Bukidnon at 44 percent and Camarines Sur at 40 percent. In Lanao del Sur, only few at 4 percent of the cassava farm parcels were fully owned as 70.67 percent were tenanted.
- Tenanted farm parcels were also common in Bohol as reported by 46.67 percent. In Sulu, farm parcels which were rent free and held under owner-like possession comprised 48 percent each.

Farm Investments

- Among the work animals used in the focus cassava parcels, ownership of carabao was reported by 32.44 percent of the farmers in the six (6) provinces covered. Some 20.67 percent had cattle as work animals. By province, the

proportions of cassava farmers with carabaos were higher in Bohol at 72 percent, Camarines Sur at 57.33 percent, Basilan at 34.67 percent and Sulu at 26.67 percent. Ownership of cattle was cited by 76 percent in Sulu and 30.67 percent in Bukidnon.

- For farm buildings and other structures, 24.89 percent of cassava farmers owned farm house. Sulu had the biggest ownership of farm house with 85.33 percent reporting. There were 26.67 percent in Camarines Sur and 18.67 percent in Bohol who had farm houses. There was no reported farm house owned and used by the sample cassava farmers in Lanao del Sur during the reference period. Meanwhile, the use of solar dryer was cited only by 1.33 percent in Bukidnon.
- Trailer/cart was the transport facility owned and used by 4.67 percent of cassava farmers. Sulu had the biggest percentage of cassava farmers with trailer/cart at 18.67 percent.
- The leading farm tools and implements were bolo and plow as reported by 85.11 percent and 55.11 percent of cassava farmers, respectively. Some 39.11 percent had yoke. Ownership of harrow, weeder, hoe and sled was cited by 11.11 percent to 18.22 percent. By province, all cassava farmers in Basilan had bolos. Bolo was also reported by 98.67 percent each in Camarines Sur and Sulu, 85.33 percent in Bohol and 84 percent in Lanao del Sur. Plow was owned and used by 88 percent of the cassava farmers in Sulu and 74.67 percent in Bohol. Those who have harrow were higher in Bohol at 24 percent, Camarines Sur at 22.67 percent and Lanao del Sur at 18.67 percent. Ownership of hoe and weeder was dominant in Camarines Sur and Lanao del Sur with 62.67 percent and 66.67 percent reporting, respectively.

C. Farm Practices (Tables 9-16)

Uses of Cassava Variety Planted

- Across the representative provinces, majority of the cassava farmers at 65.78 percent planted cassava solely for food use. There were 16 percent who produced cassava for feed purposes and 5.11 percent for non-food purposes. Those who planted cassava both for food and non-food uses were 10.67 percent. Cassava harvests utilized for both food and feeds were mentioned by a mere 1.11 percent and for non-food and feeds by 0.22 percent. The usage of cassava for food, non-food and feeds was reported by 1.11 percent.
- In Basilan, Lanao del Sur and Sulu, all cassava farmers cited that they produced cassava primarily for food use. This was also noted by 84 percent in Camarines

Sur. The usage of cassava purely for feed purposes was higher in Bukidnon as reported by 85.33 percent of the farmers. .

- In Bohol, cassava was utilized both for food and non-food by 64 percent of the farmers. Some 24 percent were planting cassava intended only for non-food purposes. There were 6.67 percent in Bohol who used cassava for food, non-food and feeds.

Source of Planting Materials

- The sources of planting materials (cuttings) of 44.67 percent and 43.56 percent of the cassava farmers were from their own production and co-farmers, respectively. Planting materials sourced from cooperatives and traders were reported by 9.56 percent and 2.44 percent, respectively. Those who obtained planting materials from the Department of Agriculture/Regional Field Office (DA/RFO) accounted for 1.33 percent. Less than one percent availed planting materials from Local Government Units (LGU).
- By province, co-farmers were the sources of planting materials of 70.67 percent of cassava farmers in Camarines Sur, 68 percent in Bukidnon, and 52 percent in Bohol. Own produced planting materials were cited by 89.33 percent of farmers in Basilan and 74.67 percent in Sulu. Those who sourced their planting materials from cooperatives were 54.67 percent in Lanao del Sur

Months of Planting and Harvesting

- Planting of cassava was done all year round. However, planting mostly took place during the month of May 2013 as identified by 22.44 percent of farmers across the six provinces. Planting in January, March, April and June 2013 was also common with 12 to 15 percent reporting. At the provincial level, planting in May was observed by 37.33 percent of farmers in Bukidnon, 29.33 percent in Bohol and 22.67 percent in Basilan. Planting during the month of June 2013 was dominant among 38.67 percent of farmers in Camarines Sur. Those who usually planted cassava in April 2013 were 34.67 percent in Sulu. Peak planting months in Lanao del Sur were January and March 2013 as reported by 29.33 percent and 28 percent of the farmers, respectively.
- Harvesting of cassava, on the other hand, was common in the month of March 2014 with 29.56 percent of the cassava farmers reporting. There were 14 percent who cited the months of January and February. In particular, March harvesting was mentioned by 54.67 percent of farmers in Bohol, 49.33 percent in Camarines Sur and 46.67 percent in Bukidnon. Some 33.33 percent of cassava farmers in Sulu harvested cassava during the month of January. About 30.67

percent in Lanao del Sur said December was their peak harvest month. Harvesting in Basilan was regularly done during the months of January to March as reported by 18.67 to 21.33 percent of the cassava farmers.

Type of Labor Used in Land Preparation

- In the six provinces surveyed, the use of man-animal labor in land preparation was practiced by 86.89 percent of cassava farmers. The usage of machine was minimal of which only 11.56 percent used four-wheel tractor and 2.22 percent used two-wheel tractor.
- In Bukidnon, Lanao del Sur and Sulu, all the sample cassava farmers cited the use of man-animal in land preparation. The same method was practiced by 98.67 percent of farmers in Bohol and 89.33 in Camarines Sur. In Basilan, 33.33 percent employed the service of animal in land preparation. No usage of machine was reported in the province of Basilan and Sulu. Man-machine labor using four-wheel tractor was reported by 30.67 percent in Bohol and 26.67 percent in Bukidnon. Those who used two-wheel tractor were 6.67 percent in Lanao del Sur, 4 percent in Bohol and 2.67 percent in Bukidnon.

Method of Weeding

- Across the provinces surveyed, 93.33 percent of cassava farmers removed weeds manually while 13.33 percent practiced chemical spraying.
- In Sulu and Basilan, all cassava farmers did manual weeding. This was also mentioned by 73.33 percent to 98.67 percent of cassava farmers in Bukidnon, Bohol, Camarines Sur and Lanao del Sur.
- Chemical spraying to eradicate weeds in cassava farms was employed by 52 percent in Bukidnon and 24 percent in Lanao del Sur. Only few at 4 percent in Camarines Sur performed this operation.

Users of Fertilizers

- Across the surveyed provinces, few farmers at 1.78 percent applied organic fertilizers in their cassava farming. Its usage was registered by 5.33 percent in Bohol, 4 percent in Camarines Sur and 1.33 percent in Bukidnon. There was no reported application of organic fertilizers in Basilan, Lanao del Sur and Sulu.
- For the usage of inorganic fertilizers, Complete (14-14-14) and Ammonium Sulfate (21-0-0) were leading as indicated by 27.78 percent and 16.89 percent of

the sample cassava farmers, respectively. During the reference period, the application of complete fertilizer (14-14-14) was mentioned by 84 percent in Bohol, 52 percent in Lanao del Sur, and 29.33 percent in Bukidnon. In Lanao del Sur, 98.67 percent of cassava farmers were users of Ammonium Sulfate (21-0-0) in cassava farms.

Users of Pesticides

- During the reference period, there were 13.11 percent of cassava farmers who applied liquid herbicides/weedicides. Few at 0.22 percent each used liquid insecticides and solid organic pesticides.
- About 53.33 percent of cassava farmers in Bukidnon and 24 percent in Lanao del Sur utilized the liquid form of herbicides/weedicides. In Camarines Sur, some 1.33 percent were users each of the liquid form of herbicide/weedicide and insecticides. The usage of solid organic pesticides was recorded in 1.33 percent of cassava farmers in Bohol.

D. Input Usage (Table 17-22)

Planting Materials (Seed Pieces/Cuttings)

- The quantity of planting materials used in the production of cassava averaged 11,261 pieces per hectare. Of this quantity, 4,954 pieces were farmer's own produced, 3,460 pieces were received from others and the remaining 2,847 pieces were purchased.
- Across provinces, the usage of planting materials was highest in Basilan at 21,181 pieces per hectare. Sulu followed with 18,358 pieces per hectare. Farmers in Lanao del Sur posted the least usage at 5,222 pieces per hectare.

Fertilizers

- On the average, application of organic fertilizer was 45.48 kilograms per hectare. Application rate was highest in Bohol at 300.98 kilograms per hectare while it was only 21.77 kilograms per hectare in Camarines Sur. Less than one (1) kilogram per hectare was noted in Bukidnon. No application of organic fertilizer was observed in Basilan, Lanao del Sur and Sulu.

- Among the solid inorganic fertilizer grades, the application of ammonium sulfate (21-0-0) was highest at an average of 160.34 kilograms per hectare. This was followed by complete fertilizer (14-14-14) at 71.40 kilograms per hectare.
- By province, cassava farmers in Lanao del Sur were the heavy users of ammonium sulfate (21-0-0) at 416.77 kilograms per hectare. Bohol had the biggest usage of complete fertilizer (14-14-14) at 174.15 kilograms per hectare followed by Lanao del Sur at 100.92 kilograms per hectare. No usage of any inorganic fertilizer was noted in Basilan and Sulu.
- As to the nutrient content, the quantity of fertilizers applied in one hectare of cassava farm contained 48.93 kilograms of nitrogen, 11.34 kilograms of phosphorous and 11.64 kilograms of potassium. Application of nitrogen was highest in Lanao del Sur at 109.10 kilograms per hectare. Phosphorus and potassium contents were highest in Bohol corresponding to 26.22 kilograms per hectare and 29.11 kilograms per hectare.

Pesticides

- The application of liquid herbicides/weedicides averaged 0.59 liter per hectare. Cassava farmers in Bukidnon were heavy users of liquid herbicides/weedicides with an application rate at 1.68 liters per hectare. Lanao del Sur followed at 0.65 liter per hectare and the least usage was noted in Camarines Sur at 0.04 liter per hectare.
- The use of liquid insecticides was reported only in Camarines Sur at 0.04 liter per hectare. Solid organic pesticides were reported only in Bohol at less than 0.01 kilogram per hectare.

Labor Utilization

- The average labor utilization in the production of cassava was 77.48 mandays per hectare. The biggest was reported in Basilan at 107.92 mandays per hectare and the least was noted in Sulu at 65.33 mandays per hectare.
- By source, hired farm workers provided the biggest labor input at 33.27 mandays per hectare. Operator and family members shared 16.44 and 25.80 mandays per hectare, respectively. Exchange labor contributed the least at 1.97 mandays per hectare.
- By farm activity, labor requirements were highest in manual weeding and harvesting averaging 17.85 mandays and 17.04 mandays per hectare, respectively. Planting activity utilized 8 mandays per hectare. In harrowing,

preparation of planting materials and hauling of produce, labor inputs ranged from 2.95 mandays to 3.62 mandays per hectare.

- At the provincial level, manual weeding had higher labor utilization in Camarines Sur at 25.65 mandays, Basilan at 21.07 mandays and Lanao del Sur at 20.03 mandays. Harvesting required higher labor inputs in Bukidnon at 25.93 mandays per hectare and Basilan at 20.87 mandays per hectare. Labor usage in planting was bigger in Bukidnon, Sulu and Basilan at 10.17 mandays, 11.04 mandays and 13.83 mandays per hectare, respectively. In Basilan, land clearing recorded 14.64 mandays of labor inputs.

E. Average Production Costs and Returns of Cassava

All Provinces **(Table 23-24)**

- In 2014, the cost of producing cassava in the six (6) provinces under review averaged P32,490 per hectare. Per kilogram, it was computed at P1.75.
- Cash costs which contributed 55.56 percent in the total production cost amounted to P18,052 per hectare. The biggest expense items were hired labor at P7,443 per hectare and landowner's share at P3,622 per hectare.
- Imputed costs at P13,503 per hectare shared 41.56 percent. Family labor at P4,205 per hectare and operator labor at P2,888 per hectare contributed the biggest imputed cost items.
- The remaining 2.88 percent of the total production cost were non-cash costs amounting to P935 per hectare of which planting materials accounted for the bulk of the cost at P759 per hectare.
- Cassava production during the reference period averaged 18,567.96 kilograms per hectare. Correspondingly, gross value of production amounted to P54,064 per hectare or P2.91 per kilogram. Including the value of the harvested 6.35 kilograms of cassava tops and 4,912 pieces of planting materials, farmers grossed a total of P56,620 per hectare.
- Returns above cash cost averaged P38,568 per hectare. After subtracting cash and non-cash costs, returns amounted to P37,634 per hectare. Farmers netted P24,131 per hectare. Net profit –cost ratio stood at 0.74.
- Across the six (6) provinces, variable costs in cassava production averaged P28,383 per hectare or 87.36 percent of total cost. Hired labor was the biggest variable cost item at P7,458. On the other hand, fixed costs accounted for 12.64

percent or P4,107 per hectare and the rental value of owned land incurred the biggest cost at P2,109.

Camarines Sur
(Tables 25-26)

- In Camarines Sur, the average cost of cassava production was P28,169 per hectare or P3.78 per kilogram.
- About 17.81 percent of the total production cost were cash costs estimated at P5,016 per hectare. The bulk of cash costs were hired labor at P2,047 and minor repairs at P1,507.
- Non-cash costs comprised 8.41 percent or P2,369 per hectare. Landowner's share and planting materials at P1,351 and P924, respectively, were the major non-cash expenses.
- The imputed costs constituted 73.78 percent of the total production cost amounting to P20,784 per hectare. The leading expense items were rental value of owned land at P6,233, family labor at P7,926 and operator labor at P4,536.
- In Camarines Sur, production per hectare of cassava roots averaged 7,453.69 kilograms with farmgate price at P4.84 per kilogram. In addition, 101.02 kilograms of cassava tops and 10,740 pieces of planting materials were produced. Farmers grossed a total of P40,087 per hectare.
- Farm receipts over cash costs were P35,071 per hectare. Above cash and non-cash costs, farmers gained P32,702 per hectare. After deducting all costs of production, cassava farmers earned P11,918 per hectare.
- For every peso invested in cassava production, farmers gained P0.42.
- Variable costs accounted for 75.16 percent of the total production cost or P21,172 per hectare. The remaining costs were fixed costs averaging P6,998 per hectare.

Bohol
(Tables 27-28)

- Cassava farmers in Bohol incurred an average production cost of P33,952 per hectare. This was equivalent to P2.63 per kilogram.

- Cash costs totalled P22,837 per hectare or 67.26 percent of total costs. Hired labor had the biggest cost at P12,456 per hectare, followed by cost of fertilizers at P4,716 per hectare.
- Non-cash expenditures averaged at P468 per hectare accounted for 1.38 percent of total costs. The main cost item was planting materials at P229 per hectare.
- Imputed costs summed up to P10,647 per hectare or 31.36 of total cost. Family and operator labor were the leading imputed cost items amounting to P2,578 and P4,492 per hectare, respectively.
- Production of cassava roots in Bohol was 12,910.40 kilograms per hectare with farmgate price at P3.94 per kilogram. Gross earnings were computed at P50,924.
- Deducting cash costs, cassava farmers earned P28,087 per hectare. With cash costs and non-cash costs combined, net returns amounted to P27,619 per hectare. Returns after deducting all costs were P16,972 per hectare. A one-peso investment in cassava production, farmers earned P0.50.
- Variable costs comprised 91.86 percent of total cost or P31,187 per hectare. Fixed costs shared the remaining 8.14 percent at an amount of P2,765 per hectare.

Bukidnon
(Tables 29-30)

- In Bukidnon, cassava production entailed an average cost of P41,154 per hectare or P1.47 per kilogram.
- Cash costs contributed 75.45 percent of total production cost or P31,049 per hectare. Of this, hired labor recorded the biggest cost at P16,678 per hectare.
- Non-cash costs at less than 2.0 percent were estimated at P503 per hectare. Planting materials comprised the biggest expense item at P401 per hectare.
- Imputed costs shared 23.33 percent of all cost or P9,601 per hectare. Rental value of owned land accounted for the bulk of the cost at P5,470 per hectare.
- With an average production of 28,027.01 kilograms per hectare, cassava farmers in Bukidnon grossed P76,227. Average price per kilogram of cassava roots was P2.72.

- Receipts above cash costs were estimated at P45,178 per hectare. Above cash and non-cash costs, farmers earned P44,675 per hectare. After accounting for all the costs, net returns were estimated at P35,074 per hectare.
- For every peso invested in cassava production, farmers gained P0.85.
- Variable costs amounted to P30,542 per hectare or 74.21 percent of the total cost. Fixed costs at P10,612 per hectare contributed 25.79 percent.

Basilan
(Tables 31-32)

- In Basilan, the average cost of producing cassava in a one hectare farm was P24,227. On a per kilogram basis, cost was P1.44.
- Imputed costs at P19,840 per hectare constituted the biggest share of 81.89 percent in the total production cost. The combined costs of operator, family and exchange labor were the major expense items valued at P17,988 per hectare.
- Non-cash expenses shared 12.93 percent of production cost or equivalent to an average of P3,132 per hectare. Of this amount, P3,048 were spent for planting materials.
- Cash outlays were only P1,255 per hectare of which the cost of minor repairs was P512.
- In Basilan, the volume of production per hectare averaged 16,829.04 kilograms for cassava roots at farm price of P5.28 per kilogram. Including the value of production of the 2,350 pieces of planting materials, cassava farmers grossed a total of P90,053 per hectare during the reference period.
- After deducting cash costs, cassava farmers earned P88,799 per hectare. When both cash and non-cash costs were subtracted, net returns settled at P85,666. Considering all costs, farmers netted P65,827 per hectare. Net profit-cost ratio was 2.72.
- Average variable costs of production amounted to P22,665 per hectare or 93.55 percent of all costs. Fixed costs averaged P1,561 per hectare.

Lanao del Sur
(Tables 33-34)

- The average production cost of cassava in Lanao del Sur was P35,206 per hectare. Cost per kilogram was P1.62.
- Cash expenditures amounting to P20,462 per hectare comprised 58.12 percent of the total production cost. Among the cash cost items, landowner's share contributed the biggest at P8,065 per hectare followed by hired labor at P5,532 and solid inorganic fertilizers at P4,655.
- Non-cash expenditures were P142 per hectare. Own produced planting materials were the sole non-cash cost item.
- Imputed costs at P14,602 per hectare shared 41.48 percent. Major costs items were solid inorganic fertilizers at P5,641 and labor costs rendered by operator and family labor amounting to P5,762 per hectare.
- The volume of cassava production in Lanao del Sur averaged 21,789.58 kilograms per hectare priced at P2.07 per kilogram. The quantity of planting materials harvested was 4,892 pieces per hectare. The total gross earnings received by cassava farmers reached P50,070 per hectare.
- Returns above cash costs were P29,607 per hectare. Receipts above cash and non-cash costs amounted to P29,465 per hectare. Deducting all costs, net returns averaged P14,863 per hectare.
- For every peso of investment in cassava production, farmers earned P0.42.
- Variable costs at P32,791 per hectare shared 93.14 percent of total cost. The remaining 6.86 percent or P2,416 per hectare were fixed costs.

Sulu
(Tables 35-36)

- During the reference period, cassava farmers in Sulu incurred an average cost of P15,603 per hectare in the production of cassava. Per kilogram, production cost was P2.47.
- Of the total production cost, imputed costs shared 74.80 percent equivalent to P11,671 per hectare. Of this amount, family labor was the biggest cost item amounting to P7,993 followed by operator labor at P2,664.

- Non-cash expenses amounting to P2,437 per hectare were 15.62 percent of all costs. Planting materials were the major non-cash expenses at P2,255.
- Cash outlays were very minimal amounting to P1,494 per hectare. Expenses on minor repairs of farm investments were the major cash expenses which totaled to P1,407.
- Farmers in Sulu produced an average of 6,320.51 kilograms of cassava roots per hectare with farmgate price at P5.28. In addition, about 18,058 pieces of planting materials were harvested and sold. Sulu farmers had a total gross income of P36,159 per hectare.
- Returns above cash costs were P34,665. Subtracting cash and non-cash expenses, cassava farmers realized returns of P32,228 per hectare. Net returns averaged P20,557 per hectare. Farmers gained P1.32 for every peso invested in cassava production.
- Average variable costs of P15,082 per hectare shared 96.66 percent in the total production cost. Fixed costs averaged P520 per hectare.

Inter-Provincial Comparison (Tables 37-38b)

- Across the six (6) provinces surveyed, farmers in Bukidnon reported the highest average production of cassava at 28,027 kilograms per hectare. The least was cited by farmers in Sulu at 6,321 kilograms per hectare. The biggest area harvested to cassava was noted in Lanao del Sur at 2.17 hectares and the smallest was in Camarines Sur at 0.36 hectare. Usage of planting materials was biggest in Basilan at 21,181 pieces per hectare, followed by Sulu at 18,358 pieces per hectare. It was lowest in Lanao del Sur at only 5,222 pieces per hectare. The use of fertilizer (all types) was heavier in Lanao del Sur and Bohol at 545.69 kilograms and 502.09 kilograms per hectare, respectively. For Bukidnon, it was 62.23 kilograms and in Camarines Sur, 23.65 kilograms per hectare. There was no reported application of fertilizer in Basilan and Sulu. Labor utilization in cassava production was highest in Basilan at 107.92 mandays per hectare. Lanao del Sur followed at 82.37 mandays per hectare. For Bohol, Bukidnon and Sulu, labor inputs were 69.56 mandays, 68.31 mandays and 65.33 mandays per hectare, respectively.
- In terms of production cost per hectare, Bukidnon had the highest at P41,154 and Sulu had the least cost at P15,603 per hectare. Cash outlays comprised the bulk of the total costs in Bukidnon at P31,049, Bohol at P22,837 and Lanao del Sur at P20,462. Imputed costs contributed the biggest in Camarines Sur at P20,787, Basilan at P19,840 and Lanao del Sur at P14,602. Non-cash costs

accounted the lowest, which ranged from P3,132 in Basilan to P142 per hectare in Lanao del Sur.

- Cassava farmers in Sulu grossed the lowest at P36,159 while farmers in Basilan earned the biggest at P90,053 per hectare.
- In Basilan, cassava farmers netted the biggest returns at P65,827 per hectare followed by farmers in Bukidnon at P35,074 per hectare. Camarines Sur and Lanao del Sur had the lowest net returns at P11,870 and P14,863 per hectare, respectively.
- Net profit-cost ratio was highest in Basilan at 2.72. This was followed by Sulu at 1.32. The lowest was recorded in Camarines Sur and Lanao del Sur at 0.42 each.

F. Other Information (Tables 39-49)

Disposition of Produce

- The survey indicated that a bigger portion of cassava produced in the six (6) provinces was sold. About 54.38 percent of the total volume of cassava production were sold to processors of foods while 29.11 percent were sold to processors of feeds. The volume sold to traders accounted for 11.99 percent. Other dispositions such as landowner's share, given away, home consumption and home-based processing recorded minimal proportion ranging from 0.13 percent to 1.70 percent.
- At the provincial level, the proportions of volume sold to processors for food use were higher in Lanao del Sur at 96.44 percent, Bohol at 60.30 percent and Basilan at 45.67 percent. Selling to processors of feeds comprised bigger percentage of the volume of cassava produced in Bukidnon at 85 percent and Camarines Sur at 47.64 percent. The bulk of the produce in Sulu at 65.92 percent were marketed to traders. In Bohol, 33.18 percent were, likewise, sold to traders. Cassava farmers in Basilan also indicated higher disposition for home-based processing at 18.49 percent and for home consumption at 13.97 percent.

Production Compared with Last Year

- In comparison to last year's production, about 50.67 percent of all the sample cassava farmers reported that they had the same production this year. Some 19.56 percent mentioned higher production while 22.22 percent cited lower production this year.

- The percentages of cassava farmers who stated the same production level in the last year and this year were higher in Sulu at 72 percent, Camarines Sur at 66.67 percent, Basilan at 65.33 percent, Lanao del Sur at 52 percent and Bukidnon at 36 percent. Bohol recorded the highest proportion of farmers who reported lower production this year at 41.33 percent followed by Bukidnon at 30.67 percent.
- Among the cassava farmers who had higher production this year, increase in area and availability of good quality planting materials were the reasons given by 29.55 percent each. There were 34.09 percent who mentioned the use of fertilizers and 17.05 percent said good weather condition contributed to their higher production. Proper farm management was reasoned out by only 10.23 percent.
- Expansion in cassava area was the major contributory factor for higher production among 94.44 percent of the cassava farmers in Basilan. Increase in area and absence of pests and diseases were the reasons provided by 50 percent of the cassava farmers in Sulu. The use of good quality planting materials was stated by 72.73 percent in Camarines Sur and 66.67 percent in Bukidnon. There were 88.89 percent in Lanao del Sur and 42.86 percent in Bohol who reported that their higher production was due to the usage of fertilizer. In addition, proper farm management was reported by 38.89 percent in Lanao del Sur.
- On the other hand, the major reason provided by cassava farmers who had lower production this year was the occurrence of bad weather condition as reported by 46 percent across the provinces covered. Non-usage of fertilizer was pointed out by 30 percent. Other reasons given by 8 to 13 percent of the cassava farmers were low quality of planting materials, decrease in area, poor soil condition and occurrence of pests and diseases.
- In particular, the proportions of cassava farmers whose reason was bad weather condition were higher in Bukidnon at 78.26 percent, Bohol at 58.06 percent, Sulu at 35.29 percent and Basilan at 33.33 percent. The incidence of pests and diseases caused lower production to 41.18 percent of the cassava farmers in Sulu. No fertilizer application was the common reason of 83.33 percent in Lanao del Sur. About half of the cassava farmers in Camarines Sur who reported lower production was due to poor soil condition.

Problems Related to Production

- Bad weather condition / calamities, lack of capital and high cost of inputs were the common production problems encountered by cassava farmers. These were reported by 34.89 percent, 36.44 percent and 25.33 percent, respectively.

- Among the six provinces, Bukidnon and Bohol had the biggest percentages of cassava farmers who reported problem on bad weather condition/ calamities at 65.33 percent and 58.67 percent, respectively. Likewise, 69.33 percent in Basilan and 53.33 percent in Lanao del Sur were constrained by lack of capital. In addition, there were 80 percent in Lanao del Sur whose problem was the high cost of production inputs.

Mayor Buyers of Produce

- Across the provinces surveyed, processors were the major buyers of half of the cassava farmers who sold their produce. Consumer was cited by 15.11 percent and wholesaler, by 12.22 percent and agent by 10 percent. Other major traders were assembler and wholesaler-retailer. Cooperatives were also the major buyer of 2.44 percent of the cassava farmers.
- The percentages of cassava farmers who transacted with processors were highest in Lanao del Sur at 97.33 percent, Bukidnon at 77.33 percent, Bohol at 68 percent. Those who sold their produce to agents were bigger in Sulu at 45.33 percent. In Basilan, the major buyers were processors and consumers as reported by 49.33 percent and 38.67 percent, respectively. Selling of produce to wholesalers, wholesalers-retailers, processors and consumers was mentioned by 18.67 percent to 26.67 percent of the cassava farmers in Camarines Sur.

Problems Related to Marketing

- Instability of price was the foremost marketing problem identified by 52 percent of the total sample cassava farmers. Low price of produce was mentioned by 42.89 percent and rough roads/high transport cost by 20.22 percent. Those who reported problems on lack of marketing information and limited buyer/market outlet were 6.22 percent and 8 percent, respectively.
- Instability of price was a dominant problem among 61.33 percent to 66.67 percent of the cassava farmers in Bukidnon, Sulu and Basilan. Majority at 80 percent in Camarines Sur and 72 percent in Lanao del Sur complained on the low price of the produce. Lack of marketing information was the constraint of 14.67 percent in Camarines Sur and 18.67 percent in Bohol. Problems on rough roads and high transport costs were faced by 30.67 percent in Camarines Sur and 29.33 percent in Lanao del Sur.

Access to Credit

- Of the total cassava farmers surveyed in the six (6) provinces, only 7.33 percent availed of loans for cassava production during the reference period. In Bukidnon and Bohol, only 20 percent each availed of loans while only 4 percent in Lanao del Sur. No availment of loans was reported in Camarines Sur, Basilan and Sulu.
- Among those who availed of loans, traders were the major source of loan of 39.39 percent. There were 30.30 percent who reported borrowing from private individuals. Some 18.18 percent sourced loans from cooperatives and 12.12 percent from banks.
- In Bohol, 60 percent of cassava farmers cited private individual as their major source of loans. Borrowings from traders and cooperatives were reported by 26.67 percent and 13.33 percent, respectively. Traders were the leading sources of credit among 60 percent in Bukidnon. Banks came next with 26.67 percent reporting. Availment of loans in Lanao del Sur came solely from cooperatives.

Access to Extension Services

- About 15.78 percent of the cassava farmers covered in the survey indicated awareness of government programs/interventions related to cassava production. However, those who availed of benefits were only 22.54 percent.
- By province, cassava farmers who were aware of government programs/interventions were 38.67 percent in Camarines Sur and 36 percent in Bohol. Only few were reported in Bukidnon at 12 percent and Lanao del Sur at 8 percent. There was no reported awareness of the sample cassava farmers in Basilan and Sulu during the reference period.
- Of the group of cassava farmers who were aware of government programs/intervention, 13.79 percent in Camarines Sur, 14.81 percent in Bohol and 22.22 percent in Bukidnon availed of benefits. In Lanao del Sur, all those who reported awareness of government programs/intervention stated that they availed of the benefits.
- Among the cassava farmers who were beneficiaries of government programs/interventions, 75 percent received training on farming technology, 43.75 percent availed of planting materials and 31.25 percent were accorded marketing support. Those who availed of fertilizer and other inputs, post-harvest facilities, and loans ranged from 6.25 percent to 25 percent.
- In Lanao del Sur and Bohol, all cassava farmer-beneficiaries were recipients of training on farming technology. Availment of planting materials was noted in 75

percent of the farmer-beneficiaries each in Camarines Sur and Bohol. Marketing support and provision of loans benefitted 66.67 percent in Lanao del Sur. Half of the farmer-beneficiaries in Bohol and Bukidnon received fertilizers and other inputs.

- Of those who were beneficiaries of government interventions, 75 percent used the benefits received in cassava production. Of this group, about 83.33 percent said that the benefits helped increase their income.
- By province, the percentage of cassava farmers who used the benefits received were 25 percent in Bohol and 75 percent in Camarines Sur. All the farmer-beneficiaries in Bukidnon and Lanao del Sur used the benefits. All the beneficiaries in Camarines Sur, Bohol and Lanao del Sur reported an increase in income.

Effect of Climate Change on Cassava Farming

- Across the six (6) provinces covered, 38.22 percent of the cassava farmers reported that they were affected by climate change. Bohol reported the highest percentage at 90.67 percent followed by Lanao del Sur at 45.33 percent. Those who were affected by climate change in Basilan, Sulu, Bukidnon and Camarines Sur ranged from 21.33 percent to 25.33 percent.
- When asked on the perceived effect of climate change, decrease in yield was the leading effect as reported by 64.53 percent of cassava farmers. Change in cropping pattern was cited by 29.07 percent, increase in input usage by 18.60 percent and decrease in frequency of plowing, by 16.86 percent.
- The proportions of cassava farmers who mentioned decrease in yield were higher in Basilan at 93.75 percent and Bohol at 85.29 percent. Change in cropping pattern was pointed out by 68.42 percent of the cassava farmers in Camarines Sur. In Bukidnon, 55.56 percent said the change in cropping pattern and increase in input usage were the effects of climate change.

Membership in Organization and Type of Benefit Received

- Only 5.56 percent of cassava farmers in the six provinces surveyed were members of farmers' organizations. Membership was cited by 21.33 percent in Camarines Sur, 8 percent in Lanao del Sur and 4 percent in Bukidnon.
- Among the type of benefits received from farmers' organizations, availment of training/seminars was mentioned by 92 percent, financial/credit support by 28 percent, inputs and marketing support by 20 percent each.

- In Lanao del Sur, all farmer-beneficiaries received training/seminars and financial support. There were 83.33 percent and 66.67 percent in Lanao del Sur who were provided with marketing and input support, respectively. Training/seminars, likewise, benefitted 93.75 percent in Camarines Sur and 66.67 percent in Bukidnon. Thirty three (33) percent in Bukidnon were given support in terms of financial aspect and inputs.

Plans of Cassava Farmers

- About 59.33 percent of cassava farmers in the six (6) provinces planned to maintain their current operations. The proportion ranged from 20 percent in Basilan to 96 percent in Camarines Sur.
- Those who planned to expand their operations comprised 40.44 percent. This plan was identified by 80 percent in Basilan while only 4 percent in Camarines Sur. Other plan such as reduction in farm area was only recorded in Bohol by 1.33 percent of the cassava farmers.

Recommendations to Further Improve Cassava Production

- To further improve cassava production, price support and financial support were the recommendations of 57.78 percent and 54.89 percent of the cassava farmers, respectively. Provision of new /modern farming technologies was stated by 32 percent. Regulation of farm inputs price was suggested by 18.44 percent. About 0.22 percent to 15.33 percent reported addressing environmental concerns, implementing land reform program, soil testing analysis and provision of infrastructure facilities.
- The biggest proportion of cassava farmers who recommended price support was noted in Sulu, Camarines Sur, Bukidnon and Lanao del Sur ranging from 62.67 percent to 88 percent. Financial assistance was brought out by 93.33 percent in Basilan and 84 percent in Lanao del Sur. Provision of new/modern farming technologies was suggested by more than 50 percent of cassava farmers in Camarines Sur, Bukidnon and Bohol. There were 41.33 percent in Camarines Sur who wanted the provision of infrastructure facilities. In Lanao del Sur, soil testing and input support were the other recommendations given by 32 percent and 25.33 percent, respectively.

STATISTICAL TABLES

Table 1. Percentage distribution of cassava farmers by sex,
selected provinces, April 2013 - March 2014

Province	Male	Female
All Provinces	84.67	15.33
Camarines Sur	78.67	21.33
Bohol	88.00	12.00
Bukidnon	84.00	16.00
Basilan	58.67	41.33
Lanao del Sur	100.00	
Sulu	98.67	1.33

Table 2. Average age percentage distribution of cassava farmers by age group,
selected provinces, April 2013 - March 2014

Province	Average Age (years)	Age Group (years)					
		< 31	31 - 40	41 - 50	51 - 60	61 - 70	> 70
All Provinces	48	5.56	19.33	33.78	27.11	12.89	1.33
Camarines Sur	51	1.33	18.67	29.33	30.67	18.67	1.33
Bohol	53		14.67	26.67	33.33	21.33	4.00
Bukidnon	49	10.67	13.33	26.67	33.33	13.33	2.67
Basilan	48	4.00	10.67	49.33	25.33	10.67	
Lanao del Sur	40	14.67	38.67	32.00	9.33	5.33	
Sulu	49	2.67	20.00	38.67	30.67	8.00	

Table 3. Percentage distribution of cassava farmers by educational attainment, selected provinces,
April 2013 - March 2014

Province	Elementary Level	Elementary Graduate	High School Level	High School Graduate	College Level	College Graduate	Post Graduate	Vocational	No Schooling
All Provinces	34.89	18.44	11.56	11.11	5.56	4.00	0.22	0.44	13.78
Camarines Sur	17.33	42.67	16.00	18.67	4.00	1.33			
Bohol	29.33	44.00	9.33	6.67	2.67	5.33		2.67	
Bukidnon	26.67	12.00	10.67	25.33	13.33	9.33	1.33		1.33
Basilan	45.33	2.67	8.00	4.00	2.67				37.33
Lanao del Sur	34.67	2.67	12.00	8.00	8.00	8.00			26.67
Sulu	56.00	6.67	13.33	4.00	2.67				17.33

Table 4. Average farming experience of cassava farmers and percentage distribution by number of years engaged in cassava production, selected provinces, April 2013 - March 2014

Province	Average Farming Experience (years)	Years			
		< 11	11 - 20	21 - 30	> 30
All Provinces	13	52.44	26.67	14.00	6.89
Camarines Sur	11	66.67	18.67	12.00	2.67
Bohol	17	40.00	24.00	18.67	17.33
Bukidnon	12	61.33	24.00	6.67	8.00
Basilan	9	72.00	24.00	2.67	1.33
Lanao del Sur	13	49.33	30.67	17.33	2.67
Sulu	18	25.33	38.67	26.67	9.33

Table 5. Percentage distribution of cassava farmers by main occupation, selected provinces,
April 2013 - March 2014

Province	Officials of the Government and Special Interest Organizations, Corporate Executives, Managers Managing Proprietors and Supervisors	Professionals	Technicians and Associate Professionals	Service Workers and Shop and Market Sales Workers
All Provinces	1.33	0.45	0.22	0.89
Camarines Sur				
Bohol			1.33	2.67
Bukidnon	2.67	2.67		1.33
Basilan	5.33			1.33
Lanao del Sur				
Sulu				

Table 5. (Concluded)

Province	Farmers, Forestry Workers and Fishermen				Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Occupation: Laborers and Unskilled Workers
	Field Crop Farmers	Orchard Farmers	Livestock Farmers	Fishermen			
All Provinces	80.44	12.44	0.44	0.67	0.45	0.44	2.22
Camarines Sur	66.67	18.67	2.67		2.67	1.33	8.00
Bohol	88.00			4.00		1.33	2.67
Bukidnon	92.00						1.33
Basilan	37.33	56.00					
Lanao del Sur	98.67						1.33
Sulu	100.00						

Table 6. Average farm size, area planted and harvested of cassava farm parcels, selected provinces, April 2013 - March 2014

(in hectare)

Province	Farm Size	Farm Parcel	
		Area Planted	Area Harvested
All Provinces	1.31	0.94	0.94
Camarines Sur	0.38	0.36	0.36
Bohol	1.82	0.83	0.83
Bukidnon	1.82	1.14	1.14
Basilan	0.65	0.49	0.49
Lanao del Sur	2.35	2.17	2.17
Sulu	0.85	0.68	0.68

Table 7. Percentage distribution of cassava farm parcels by tenurial status, selected provinces, April 2013 - March 2014

Province	Fully Owned	Leased / Rented	Tenanted	Amortized	Rent Free	Owner-like Possession	Held under CLT / CLOA	Mortgaged
All Provinces	25.11	9.11	24.44	0.22	24.00	15.33	0.89	0.89
Camarines Sur	40.00	2.67	16.00		32.00	8.00	1.33	
Bohol	17.33	12.00	46.67	1.33	9.33	5.33	4.00	4.00
Bukidnon	44.00	24.00	10.67		9.33	10.67		1.33
Basilan	45.33				45.33	9.33		
Lanao del Sur	4.00	14.67	70.67			10.67		
Sulu		1.33	2.67		48.00	48.00		

Table 8. Percentage of cassava farmers by type of farm investment owned and used in cassava farm parcels, selected provinces, April 2013 - March 2014

Farm Investment	All Provinces	Camarines Sur	Bohol	Bukidnon	Basilan	Lanao del Sur	Sulu
Work animals							
Carabao	32.44	57.33	72.00	2.67	34.67	1.33	26.67
Cattle	20.67		1.33	30.67		16.00	76.00
Farm buildings and other structures							
Farm house	24.89	26.67	18.67	5.33	13.33		85.33
Solar dryer	0.22			1.33			
Farm machinery							
Farm vehicles	2.44		9.33	5.33			
Trailer/Cart	4.67		8.00	1.33			18.67
Farm tools and implements							
Plow	55.11	53.33	74.67	53.33	21.33	40.00	88.00
Harrow	11.11	22.67	24.00			18.67	1.33
Sprayer	3.33	2.67	1.33	14.67		1.33	
Weeder	14.44			20.00		66.67	
Shovel	4.22	9.33	12.00	1.33		2.67	
Bolo	85.11	98.67	85.33	44.00	100.00	84.00	98.67
Hoe	15.33	62.67	6.67		14.67	6.67	1.33
Sled	18.22	28.00	54.67	2.67	21.33	2.67	
Post hole digger	5.56	17.33	2.67		13.33		
Yoke	39.11	37.33	74.67	16.00	21.33	1.33	84.00
Rake	2.89	2.67	4.00			9.33	1.33
Weighing Scale	1.56	1.33	2.67	5.33			
Crates	0.22		1.33				
Scythe	3.78					22.67	
Pail / Container can	2.44		14.67				
Others ^{a/}	1.78		8.00			2.67	

a/ Include: winnow and crowbar

Table 9. Percentage distribution of cassava farmers by purpose of cassava planted, selected provinces,
April 2013 - March 2014

Province	Food	Non-Food	Feeds	Food & Non-Food	Food & Feeds	Non-Food & Feeds	Food, Non- Food & Feeds
All Provinces	65.78	5.11	16.00	10.67	1.11	0.22	1.11
Camarines Sur	84.00		10.67		5.33		
Bohol	2.67	24.00		64.00	1.33	1.33	6.67
Bukidnon	8.00	6.67	85.33				
Basilan	100.00						
Lanao del Sur	100.00						
Sulu	100.00						

Table 10. Percentage of cassava farmers by source of planting materials, selected provinces,
April 2013 - March 2014

Province	DA - Regional Field Office	LGU	Cooperative	Co-Farmer	Own Produced	Trader
All Provinces	1.33	0.44	9.56	43.56	44.67	2.44
Camarines Sur	4.00	2.67		70.67	24.00	
Bohol	2.67			52.00	40.00	5.33
Bukidnon	1.33		2.67	68.00	20.00	8.00
Basilan				10.67	89.33	
Lanao del Sur			54.67	34.67	20.00	1.33
Sulu				25.33	74.67	

Table 11. Percentage distribution of cassava farmers by month of planting, selected provinces, May 2012 - June 2013

Province	2012								2013					
	May	June	July	August	September	October	November	December	January	February	March	April	May	June
All Provinces	1.11	1.56	2.22	0.22	2.44	1.78	1.33	3.33	12.00	9.56	12.44	15.11	22.44	14.44
Camarines Sur	2.67	1.33	1.33		1.33		1.33		13.33	9.33	6.67	2.67	21.33	38.67
Bohol	1.33	6.67	8.00		4.00	4.00			9.33	5.33	6.67	1.33	29.33	24.00
Bukidnon	2.67		2.67		2.67	4.00	2.67	1.33	9.33	5.33	13.33	14.67	37.33	4.00
Basilan		1.33	1.33	1.33	2.67	1.33	2.67	9.33	8.00	5.33	12.00	20.00	22.67	12.00
Lanao del Sur								2.67	29.33	16.00	28.00	17.33	6.67	
Sulu					4.00	1.33	1.33	6.67	2.67	16.00	8.00	34.67	17.33	8.00

Table 12. Percentage distribution of cassava farmers by month of harvesting, selected provinces, April 2013 - March 2014

Province	2013									2014		
	April	May	June	July	August	September	October	November	December	January	February	March
All Provinces	4.22	0.44	2.22	1.78	1.33	3.33	9.78	7.56	11.33	14.00	14.44	29.56
Camarines Sur	5.33				1.33	1.33	10.67	2.67	12.00	1.33	16.00	49.33
Bohol	13.33	2.67	4.00	4.00			5.33	4.00	2.67	1.33	8.00	54.67
Bukidnon	4.00		2.67	4.00	1.33	1.33	5.33	1.33	5.33	12.00	16.00	46.67
Basilan	2.67		2.67	1.33	4.00	9.33	6.67	5.33	9.33	18.67	21.33	18.67
Lanao del Sur						2.67	26.67	16.00	30.67	17.33	6.67	
Sulu			4.00	1.33	1.33	5.33	4.00	16.00	8.00	33.33	18.67	8.00

Table 13. Percentage of cassava farmers by type of labor used in land preparation, selected provinces, April 2013 - March 2014

Province	Man-Animal	Man-Machine	
		Two-Wheel Tractor	Four-Wheel Tractor
All Provinces	86.89	2.22	11.56
Camarines Sur	89.33		1.33
Bohol	98.67	4.00	30.67
Bukidnon	100.00	2.67	26.67
Basilan	33.33		
Lanao del Sur	100.00	6.67	10.67
Sulu	100.00		

Table 14. Percentage of cassava farmers by method of weeding, selected provinces, April 2013 - March 2014

Province	Manual	Chemical Spraying
All Provinces	93.33	13.33
Camarines Sur	94.67	4.00
Bohol	93.33	
Bukidnon	73.33	52.00
Basilan	100.00	
Lanao del Sur	98.67	24.00
Sulu	100.00	

Table 15. Percentage of cassava farmers by type of fertilizers used, selected provinces, April 2013 - March 2014

Fertilizer	All Provinces	Camarines Sur	Bohol	Bukidnon	Basilan	Lanao del Sur	Sulu
Organic Fertilizer	1.78	4.00	5.33	1.33			
Inorganic Fertilizer							
Urea (45-0-0)	2.44		9.33	2.67		2.67	
Urea (46-0-0)	2.22		1.33	12.00			
Ammonium Sulfate (21-0-0)	16.89			2.67		98.67	
Ammonium Phosphate (16-20-0)	0.89			4.00		1.33	
Complete (12-12-12)	2.67		10.67			5.33	
Complete (14-14-14)	27.78	1.33	84.00	29.33		52.00	
Complete (16-16-16)	0.44			1.33		1.33	
Muriate of Potash (0-0-60)	1.11		5.33			1.33	
Foliar	0.22			1.33			

Table 16. Percentage of cassava farmers by type of pesticides used, selected provinces, April 2013 - March 2014

Province	Herbicides / Weedicides	Insecticides	Organic Pesticides
	Liquid	Liquid	Solid
All Provinces	13.11	0.22	0.22
Camarines Sur	1.33	1.33	
Bohol			1.33
Bukidnon	53.33		
Basilan			
Lanao del Sur	24.00		
Sulu			

Table 17. Average quantity of planting materials used per hectare by mode of acquisition, selected provinces, April 2013 - March 2014

(in pieces)

Province	All Sources	Purchased	Own Produced	Received from Others
All Provinces	11,261	2,847	4,954	3,460
Camarines Sur	8,995		2,947	6,048
Bohol	10,132	644	2,827	6,661
Bukidnon	15,824	10,443	3,262	2,119
Basilan	21,181		19,475	1,705
Lanao del Sur	5,222	1,688	711	2,823
Sulu	18,358		14,613	3,745

Table 18. Average quantity of fertilizers applied per hectare by type, selected provinces, April 2013 - March 2014

(in kilogram)

Fertilizer	All Provinces	Camarines Sur	Bohol	Bukidnon	Basilan	Lanao del Sur	Sulu
Organic Fertilizer	45.48	21.77	300.98	0.01			
Inorganic Fertilizer							
Urea (45-0-0)	6.19		6.04	2.34		12.62	
Urea (46-0-0)	2.71		0.80	12.87			
Ammonium Sulfate (21-0-0)	160.34			2.92		416.77	
Ammonium Phosphate (16-20-0)	2.71			7.60		3.08	
Complete (12-12-12)	5.78		15.29			9.23	
Complete (14-14-14)	71.40	1.88	174.15	35.10		100.92	
Complete (16-16-16)	0.71			1.17		1.23	
Muriate of Potash (0-0-60)	1.42		4.83			1.85	
Foliar	a/			0.01			

a/ Less than 0.01 kilogram

Table 19. Average quantity of fertilizer nutrients applied per hectare,
selected provinces, April 2013 - March 2014

(in kilogram)

Province	Nitrogen	Phosphorous	Potassium
All Provinces	48.93	11.34	11.64
Camarines Sur	0.26	0.26	0.26
Bohol	29.30	26.22	29.11
Bukidnon	13.91	6.62	5.10
Basilan			
Lanao del Sur	109.10	16.02	16.52
Sulu			

Table 20. Average quantity of pesticides applied per hectare by type,
selected provinces, April 2013 - March 2014

Province	Herbicides / Weedicides	Insecticides	Organic Pesticides
	Liquid (L)	Liquid (L)	Solid (kg)
All Provinces	0.59	b/	a/
Camarines Sur	0.04	0.04	
Bohol			a/
Bukidnon	1.68		
Basilan			
Lanao del Sur	0.65		
Sulu			

a/ Less than 0.01 kilogram

b/ Less than 0.01 Liter

Table 21. Average labor utilization per hectare of cassava production by source of labor, selected provinces, April 2013 - March 2014

(manday)

Province	All Sources	Operator Labor	Family Labor	Exchange Labor	Hired Labor
All Provinces	77.48	16.44	25.80	1.97	33.27
Camarines Sur	76.93	23.43	43.72	0.19	9.59
Bohol	69.56	15.67	11.62	0.02	42.24
Bukidnon	68.31	3.47	6.43		58.41
Basilan	107.92	41.31	58.61	7.52	0.49
Lanao del Sur	82.37	16.76	24.22	3.23	38.16
Sulu	65.33	16.64	47.86	0.55	0.28

Table 22. Average labor utilization per hectare of cassava production by farm activity, selected provinces, April 2013 - March 2014

(manday)							
Farm Activity	All Provinces	Camarines Sur	Bohol	Bukidnon	Basilan	Lanao del Sur	Sulu
Land Preparation							
Land clearing (man)	1.35	1.36			14.64		
Plowing (man-animal)	6.83	3.76	3.71	3.97	4.28	9.74	9.58
Plowing (man-machine, 2-wheel)	0.03					0.08	
Plowing (man-machine, 4-wheel)	0.09	0.04	0.18	0.20		0.05	
Rotavating (man-machine, 2-wheel)	0.01		0.08	0.01			
Rotavating (man-machine, 4-wheel)	0.02	0.04	a/	0.01		0.05	
Harrowing (man-animal)	2.95	1.46	3.50	0.24	4.94	3.45	4.57
Harrowing (man-machine, 2-wheel)	0.01		0.02			0.01	
Harrowing (man-machine, 4-wheel)	0.04		0.19	0.08			
Furrowing (man-animal)	1.73	1.91	2.34	2.51		2.00	
Furrowing (man-machine, 2-wheel)	0.03		0.05	0.05		0.04	
Furrowing (man-machine, 4-wheel)	0.01		0.05				
Preparation of planting materials	3.50	4.69	3.85	2.78	7.70	2.51	3.82
Hauling of planting materials	2.19	3.23	2.02	0.58	5.90	1.44	4.33
Planting	8.00	9.52	6.79	10.17	13.83	4.81	11.04
Replanting	0.47	0.56	0.97	0.27	1.89	0.19	
Care of crops							
Fertilizer application (basal)	2.15	0.07	0.91	0.06		5.23	
Fertilizer application (side dressing)	0.51		2.31	0.83			
Fertilizer application (top dressing)	0.16	0.02	0.94	0.09			
Soil ameliorant application	0.60	0.28		2.89			
Weeding (manual)	17.85	25.65	15.25	14.71	21.07	20.03	12.93
Weeding (chemical spraying)	0.94	0.26		1.19		1.80	
Off-barring (man)	0.07	1.13					
Off-barring (man-animal)	0.46	0.95	2.71	0.02			
Hilling-up (man)	a/	0.04					
Hilling-up (man-animal)	0.52	0.51	3.32	0.03			
Chemical application (other than weedicide)	a/	0.02		0.01			
Pruning	0.06		0.01			0.16	
Harvesting							
Harvesting (man)	17.04	13.23	15.92	25.93	20.87	14.91	9.49
Harvesting (man-machine)	0.12		0.07	0.08		0.24	
Sorting	4.76	4.85	0.23		2.31	9.42	5.13
Hauling							
Hauling of produce (man)	3.62	1.63	1.05	1.20	7.79	5.64	2.47
Hauling of produce (man-animal)	1.27	1.73	2.90	0.40	2.35	0.57	1.96
Hauling of produce (man-machine)	0.06		0.19	0.04	0.34		
TOTAL	77.48	76.93	69.56	68.31	107.92	82.37	65.33

a/ Less than 0.01 Manday

Table 23. Average production costs and returns of cassava per hectare, selected provinces, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	18,567.96	kg	54,064	50,933	2.91
Cassava tops	6.35	kg	32	30	e/
Planting materials (seed pieces/cuttings)	4,912	pc.	2,524	2,378	0.14 ^{e/}
Area harvested = 0.94 ha.					
Number of farms = 450					
CASH COSTS			18,052	17,007	0.97
Planting materials (seed pieces/cuttings)	2,847	pc.	427	402	0.02
Organic fertilizers					
Solid	45.24	kg	46	43	e/
Inorganic fertilizers					
Solid	135.39	kg	2,740	2,582	0.15
Soil ameliorants					
Solid	378.84	kg	424	399	0.02
Pesticides					
Liquid	0.51	L	200	188	0.01
Hired labor	33.03	manday	7,443	7,012	0.40
Land tax			98	92	e/
Caretaker/overseer's wages			158	149	0.01
Rentals:					
Land			657	619	0.04
Machine			160	151	0.01
Animals			446	421	0.02
Tools and equipment			2	2	e/
Fuel	1.21	L	66	62	e/
Oil	c/	L	d/	d/	e/
Transport cost of inputs			59	55	e/
Interest payment on crop loan			118	111	0.01
Landowner's share			3,622	3,412	0.20
Repairs			1,142	1,076	0.06
Food expense			192	181	0.01
Others ^{a/}			53	50	e/

Table 23. (Concluded)

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
NON-CASH COSTS			935	880	0.05
Planting materials (seed pieces/cuttings)	4,954	pc.	759	715	0.04
Organic fertilizers					
Solid	0.24	kg	d/	d/	e/
Hired labor	0.04	manday	15	15	e/
Harvesters' share	4.45	kg	21	20	e/
Rentals:					
Land	0.94	kg	5	5	e/
Animals	0.19	kg	1	1	e/
Tools and equipment	0.12	kg	1	1	e/
Landowner's share	24.10	kg	132	124	0.01
IMPUTED COSTS			13,503	12,721	0.73
Planting materials (seed pieces/cuttings)	3,460	pc.	635	598	0.03
Inorganic fertilizers					
Solid	115.88	kg	2,211	2,083	0.12
Pesticides					
Liquid	0.09	L	34	32	e/
Operator labor	16.44	manday	2,888	2,721	0.16
Family labor	25.80	manday	4,205	3,961	0.23
Exchange labor	1.97	manday	296	279	0.02
Depreciation			394	371	0.02
Interest on operating capital			637	600	0.03
Rental value of owned land			2,109	1,987	0.11
Land tax			89	83	e/
Others ^{b/}			6	5	e/
TOTAL COSTS			32,490	30,608	1.75
GROSS RETURNS			56,620	53,341	3.05
RETURNS ABOVE CASH COSTS			38,568	36,335	2.08
RETURNS ABOVE CASH AND NON-CASH COSTS			37,634	35,454	2.03
NET RETURNS			24,131	22,733	1.30
NET PROFIT-COST RATIO			0.74	0.74	0.74

a/ Include: pail, plastic bag, sack, straw and twine,

b/ Include: straw and sack

c/ Less than 0.01 liter

d/ Less than P 1.00

e/ Less than P 0.01

f/ Per piece

Table 24. Average variable and fixed production costs of cassava, selected provinces, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	28,383	26,739	1.53
Planting materials (seed pieces/cuttings)	1,820	1,715	0.10
Fertilizers			
Organic			
Solid	46	43	c/
Inorganic			
Solid	4,951	4,665	0.27
Soil ameliorants			
Solid	424	399	0.02
Pesticides			
Liquid	234	220	0.01
Labor			
Hired labor	7,458	7,026	0.40
Operator labor	2,888	2,721	0.16
Family labor	4,205	3,961	0.23
Exchange labor	296	279	0.02
Caretaker/overseer's wages	158	149	0.01
Rentals:			
Machine	160	151	0.01
Animals	448	422	0.02
Tools and equipment	3	3	c/
Fuel	66	62	c/
Oil	b/	b/	c/
Transport cost of inputs	59	55	c/
Repairs	1,142	1,076	0.06
Food expense	192	181	0.01
Harvesters' share	21	20	c/
Landowner's share	3,753	3,536	0.20
Others ^{a/}	58	55	c/
FIXED COSTS	4,107	3,869	0.22
Land tax	186	176	c/
Lease rental	663	624	0.04
Interest payment on crop loan	118	111	0.01
Depreciation	394	371	0.02
Interest on operating capital	637	600	0.03
Rental value of owned land	2,109	1,987	0.11
TOTAL COSTS	32,490	30,608	1.75

*a/ Include: pail, plastic bag, sack, straw and twine**b/ Less than P 1.00**c/ Less than P 0.01*

Table 25. Average production costs and returns of cassava per hectare, Camarines Sur, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	7,453.69	kg	36,076	12,814	4.84
Cassava tops	101.02	kg	505	179	0.07
Planting materials (seed pieces/cuttings)	10,740	pc.	3,506	1,245	0.47 ^{c/}
Area harvested = 0.36 ha.					
Number of farms = 75					
CASH COSTS			5,016	1,782	0.67
Organic fertilizers					
Solid	18.02	kg	35	13	b/
Inorganic fertilizers					
Solid	1.88	kg	51	18	0.01
Pesticides					
Liquid	0.08	L	42	15	0.01
Hired labor	9.40	manday	2,047	727	0.27
Land tax			146	52	0.02
Rentals:					
Land			94	33	0.01
Animals			101	36	0.01
Tools and equipment			13	5	b/
Transport cost of inputs			14	5	b/
Interest payment on crop loan			2	1	b/
Landowner's share			239	85	0.03
Repairs			1,507	535	0.20
Food expense			558	198	0.07
Others ^{a/}			166	59	0.02

Table 25. (Concluded)

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
NON-CASH COSTS			2,369	842	0.32
Planting materials (seed pieces/cuttings)	2,947	pc.	924	328	0.12
Organic fertilizers					
Solid	3.75	kg	8	3	b/
Harvesters' share	7.88	kg	54	19	0.01
Rentals:					
Animals	3.00	kg	18	7	b/
Tools and equipment	1.88	kg	13	5	b/
Landowner's share	202.71	kg	1,351	480	0.18
IMPUTED COSTS			20,784	7,382	2.79
Planting materials (seed pieces/cuttings)	6,048	pc.	1,520	540	0.20
Operator labor	23.43	manday	4,536	1,611	0.61
Family labor	43.72	manday	7,926	2,815	1.06
Exchange labor	0.19	manday	47	17	0.01
Depreciation			361	128	0.05
Interest on operating capital			123	44	0.02
Rental value of owned land			6,233	2,214	0.84
Land tax			38	14	0.01
TOTAL COSTS			28,169	10,005	3.78
GROSS RETURNS			40,087	14,238	5.38
RETURNS ABOVE CASH COSTS			35,071	12,457	4.71
RETURNS ABOVE CASH AND NON-CASH COSTS			32,702	11,615	4.39
NET RETURNS			11,918	4,233	1.60
NET PROFIT-COST RATIO			0.42	0.42	0.42

a/ Include: plastic bag, sack and twine

b/ Less than P 0.01

c/ Per piece

Table 26. Average variable and fixed production costs of cassava, Camarines Sur, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	21,172	7,520	2.84
Planting materials (seed pieces/cuttings)	2,444	868	0.33
Fertilizers			
Organic			
Solid	43	15	0.01
Inorganic			
Solid	51	18	0.01
Pesticides			
Liquid	42	15	0.01
Labor			
Hired labor	2,047	727	0.27
Operator labor	4,536	1,611	0.61
Family labor	7,926	2,815	1.06
Exchange labor	47	17	0.01
Rentals:			
Animals	120	43	0.02
Tools and equipment	26	9	b/
Transport cost of inputs	14	5	b/
Repairs	1,507	535	0.20
Food expense	558	198	0.07
Harvesters' share	54	19	0.01
Landowner's share	1,591	565	0.21
Others ^{a/}	166	59	0.02
FIXED COSTS	6,998	2,485	0.94
Land tax	185	66	0.02
Lease rental	94	33	0.01
Interest payment on crop loan	2	1	b/
Depreciation	361	128	0.05
Interest on operating capital	123	44	0.02
Rental value of owned land	6,233	2,214	0.84
TOTAL COSTS	28,169	10,005	3.78

*a/ Include: plastic bag, sack and twine**b/ Less than P 0.01*

Table 27. Average production costs and returns of cassava per hectare, Bohol, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	12,910.40	kg	50,924	42,186	3.94
Area harvested = 0.83 ha.					
Number of farms = 75					
CASH COSTS			22,837	18,918	1.77
Planting materials (seed pieces/cuttings)	644	pc.	161	133	0.01
Organic fertilizers					
Solid	300.98	kg	290	240	0.02
Inorganic fertilizers					
Solid	189.04	kg	4,716	3,906	0.37
Hired labor	41.04	manday	12,456	10,319	0.96
Land tax			210	174	0.02
Rentals:					
Land			321	266	0.02
Animals			8	7	d/
Tools and equipment			8	7	d/
Fuel	1.42	L	67	55	0.01
Transport cost of inputs			155	128	0.01
Interest payment on crop loan			121	100	0.01
Landowner's share			1,966	1,629	0.15
Repairs			1,406	1,165	0.11
Food expense			751	622	0.06
Others ^{a/}			203	168	0.02
NON-CASH COSTS			468	388	0.04
Planting materials (seed pieces/cuttings)	2,827	pc.	229	190	0.02
Harvesters' share	18.51	kg	73	60	0.01
Landowner's share	25.19	kg	166	138	0.01
IMPUTED COSTS			10,647	8,820	0.82
Planting materials (seed pieces/cuttings)	6,661	pc.	1,140	945	0.09
Inorganic fertilizers					
Solid	12.07	kg	314	260	0.02
Operator labor	15.67	manday	4,492	3,721	0.35
Family labor	11.62	manday	2,578	2,136	0.20
Exchange labor	0.02	manday	10	8	d/
Depreciation			395	327	0.03
Interest on operating capital			996	825	0.08
Rental value of owned land			687	569	0.05
Land tax			35	29	d/
Others ^{b/}			c/	c/	d/
TOTAL COSTS			33,952	28,126	2.63
GROSS RETURNS			50,924	42,186	3.94
RETURNS ABOVE CASH COSTS			28,087	23,268	2.18
RETURNS ABOVE CASH AND NON-CASH COSTS			27,619	22,880	2.14
NET RETURNS			16,972	14,060	1.31
NET PROFIT-COST RATIO			0.50	0.50	0.50

a/ Include: pail, sack, straw and twine

b/ Include: straw

c/ Less than P 1.00

d/ Less than P 0.01

Table 28. Average variable and fixed production costs of cassava, Bohol, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	31,187	25,836	2.42
Planting materials (seed pieces/cuttings)	1,531	1,268	0.12
Fertilizers			
Organic			
Solid	290	240	0.02
Inorganic			
Solid	5,029	4,166	0.39
Labor			
Hired labor	12,456	10,319	0.96
Operator labor	4,492	3,721	0.35
Family labor	2,578	2,136	0.20
Exchange labor	10	8	b/
Rentals:			
Animals	8	7	b/
Tools and equipment	8	7	b/
Fuel	67	55	0.01
Transport cost of inputs	155	128	0.01
Repairs	1,406	1,165	0.11
Food expense	751	622	0.06
Harvesters' share	73	60	0.01
Landowner's share	2,132	1,766	0.17
Others ^{a/}	203	168	0.02
FIXED COSTS	2,765	2,290	0.21
Land tax	245	203	0.02
Lease rental	321	266	0.02
Interest payment on crop loan	121	100	0.01
Depreciation	395	327	0.03
Interest on operating capital	996	825	0.08
Rental value of owned land	687	569	0.05
TOTAL COSTS	33,952	28,126	2.63

*a/ Include: pail, sack, straw and twine**b/ Less than P 0.01*

Table 29. Average production costs and returns of cassava per hectare, Bukidnon, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	28,027.01	kg	76,227	86,870	2.72
Area harvested = 1.14 ha.					
Number of farms = 75					
CASH COSTS			31,049	35,384	1.11
Planting materials (seed pieces/cuttings)	10,443	pc.	1,357	1,546	0.05
Organic fertilizers					
Solid	0.01	kg	4	5	a/
Inorganic fertilizers					
Solid	61.44	kg	1,298	1,479	0.05
Soil ameliorants					
Solid	1,879.05	kg	2,102	2,396	0.08
Pesticides					
Liquid	1.68	L	597	680	0.02
Hired labor	58.41	manday	16,678	19,007	0.60
Land tax			140	160	0.01
Caretaker/overseer's wages			784	893	0.03
Rentals:					
Land			2,521	2,873	0.09
Animals			619	706	0.02
Fuel	4.74	L	260	297	0.01
Oil	0.01	L	1	2	a/
Transport cost of inputs			170	194	a/
Interest payment on crop loan			384	438	0.01
Landowner's share			1,111	1,267	0.04
Repairs			2,988	3,405	0.11
Food Expense			34	38	a/
NON-CASH COSTS			503	573	0.02
Planting materials (seed pieces/cuttings)	3,262	pc.	401	457	0.01
Landowner's share	36.56	kg	102	117	a/
IMPUTED COSTS			9,601	10,942	0.34
Planting materials (seed pieces/cuttings)	2,119	pc.	251	286	0.01
Inorganic fertilizers					
Solid	0.58	kg	14	16	a/
Operator labor	3.47	manday	645	735	0.02
Family labor	6.43	manday	1,125	1,282	0.04
Depreciation			831	947	0.03
Interest on operating capital			1,245	1,419	0.04
Rental value of owned land			5,470	6,233	0.20
Land tax			20	23	a/
TOTAL COSTS			41,154	46,899	1.47
GROSS RETURNS			76,227	86,870	2.72
RETURNS ABOVE CASH COSTS			45,178	51,486	1.61
RETURNS ABOVE CASH AND NON-CASH COSTS			44,675	50,912	1.59
NET RETURNS			35,074	39,970	1.25
NET PROFIT-COST RATIO			0.85	0.85	0.85

a/ Less than P 0.01

Table 30. Average variable and fixed production costs of cassava, Bukidnon, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	30,542	34,806	1.09
Planting materials (seed pieces/cuttings)	2,009	2,289	0.07
Fertilizers			
Organic			
Solid	4	5	a/
Inorganic			
Solid	1,312	1,495	0.05
Soil ameliorants			
Solid	2,102	2,396	0.08
Pesticides			
Liquid	597	680	0.02
Labor			
Hired labor	16,678	19,007	0.60
Operator labor	645	735	0.02
Family labor	1,125	1,282	0.04
Caretaker/overseer's wages	784	893	0.03
Rentals:			
Animals	619	706	0.02
Fuel	260	297	0.01
Oil	1	2	a/
Transport cost of inputs	170	194	a/
Repairs	2,988	3,405	0.11
Food expense	34	38	a/
Landowner's share	1,214	1,383	0.04
FIXED COSTS	10,612	12,093	0.38
Land tax	161	183	0.01
Lease rental	2,521	2,873	0.09
Interest payment on crop loan	384	438	0.01
Depreciation	831	947	0.03
Interest on operating capital	1,245	1,419	0.04
Rental value of owned land	5,470	6,233	0.20
TOTAL COSTS	41,154	46,899	1.47

a/ Less than P 0.01

Table 31. Average production costs and returns of cassava per hectare, Basilan, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	16,829.04	kg	88,924	43,276	5.28
Planting materials (seed pieces/cuttings)	2,350	pc.	1,129	550	0.07 ^{d/}
Area harvested = 0.49 ha.					
Number of farms = 75					
CASH COSTS			1,255	611	0.07
Hired labor	0.27	manday	63	31	c/
Land tax			139	68	0.01
Rentals:					
Animals			47	23	c/
Fuel	0.55	L	41	20	c/
Repairs			512	249	0.03
Food expense			307	150	0.02
Others ^{a/}			146	71	0.01
NON-CASH COSTS			3,132	1,524	0.19
Planting materials (seed pieces/cuttings)	19,475	pc.	3,048	1,483	0.18
Hired Labor	0.22	manday	84	41	0.01
IMPUTED COST			19,840	9,655	1.18
Planting materials (seed pieces/cuttings)	1,705	pc.	362	176	0.02
Operator labor	41.31	manday	6,952	3,383	0.41
Family labor	58.61	manday	9,695	4,718	0.58
Exchange labor	7.52	manday	1,341	653	0.08
Depreciation			467	227	0.03
Interest on operating capital			4	2	c/
Rental value of owned land			952	463	0.06
Others ^{b/}			67	33	c/
TOTAL COSTS			24,227	11,790	1.44
GROSS RETURNS			90,053	43,826	5.35
RETURNS ABOVE CASH COSTS			88,799	43,215	5.28
RETURNS ABOVE CASH AND NON-CASH COSTS			85,666	41,691	5.09
NET RETURNS			65,827	32,036	3.91
NET PROFIT-COST RATIO			2.72	2.72	2.72

a/ Include: plastic bag and sack

b/ Include: sack

c/ Less than P 0.01

d/ Per piece

Table 32. Average variable and fixed production costs of cassava, Basilan, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	22,665	11,030	1.35
Planting materials (seed pieces/cuttings)	3,410	1,660	0.20
Labor			
Hired labor	147	72	b/
Operator labor	6,952	3,383	0.41
Family labor	9,695	4,718	0.58
Exchange labor	1,341	653	0.08
Rentals:			
Animals	47	23	b/
Fuel	41	20	b/
Repairs	512	249	0.03
Food expense	307	150	0.02
Others ^{a/}	213	103	0.01
FIXED COSTS	1,561	760	0.09
Land tax	139	68	0.01
Depreciation	467	227	0.03
Interest on operating capital	4	2	b/
Rental value of owned land	952	463	0.06
TOTAL COSTS	24,227	11,790	1.44

a/ Include: plastic bag and sack

b/ Less than P 0.01

Table 33. Average production costs and returns of cassava per hectare, Lanao del Sur, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	21,789.58	kg	45,178	97,885	2.07
Planting materials (seed pieces/cuttings)	4,892	pc.	4,892	10,599	0.22 ^{b/}
Area harvested = 2.17 ha.					
Number of farms = 75					
CASH COSTS			20,462	44,335	0.94
Planting materials (seed pieces/cuttings)	1,688	pc.	338	731	0.02
Inorganic fertilizers					
Solid	248.31	kg	4,655	10,085	0.21
Pesticides					
Liquid	0.42	L	200	433	0.01
Hired labor	38.16	manday	5,532	11,986	0.25
Land tax			46	100	a/
Rentals:					
Land			251	544	0.01
Machine			418	905	0.02
Animals			796	1,725	0.04
Transport cost of inputs			2	5	a/
Interest payment on crop loan			58	127	a/
Landowner's share			8,065	17,474	0.37
Repairs			70	152	a/
Food expense			31	66	a/
NON-CASH COSTS			142	308	0.01
Planting materials (seed pieces/cuttings)	711	pc.	142	308	0.01
IMPUTED COSTS			14,602	31,638	0.67
Planting materials (seed pieces/cuttings)	2,823	pc.	614	1,330	0.03
Inorganic fertilizers					
Solid	297.38	kg	5,641	12,223	0.26
Pesticides					
Liquid	0.22	L	89	193	a/
Operator labor	16.76	manday	2,341	5,072	0.11
Family labor	24.22	manday	3,421	7,413	0.16
Exchange labor	3.23	manday	435	943	0.02
Depreciation			127	275	0.01
Interest on operating capital			606	1,313	0.03
Rental value of owned land			1,127	2,441	0.05
Land tax			201	435	0.01
TOTAL COSTS			35,206	76,281	1.62
GROSS RETURNS			50,070	108,484	2.30
RETURNS ABOVE CASH COSTS			29,607	64,149	1.36
RETURNS ABOVE CASH AND NON-CASH COSTS			29,465	63,841	1.35
NET RETURNS			14,863	32,204	0.68
NET PROFIT-COST RATIO			0.42	0.42	0.42

a/ Less than P 0.01

b/ Per piece

Table 34. Average variable and fixed production costs of cassava, Lanao del Sur, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	32,791	71,046	1.50
Planting materials (seed pieces/cuttings)	1,094	2,369	0.05
Fertilizers			
Inorganic			
Solid	10,296	22,308	0.47
Pesticides			
Liquid	289	627	0.01
Labor			
Hired labor	5,532	11,986	0.25
Operator labor	2,341	5,072	0.11
Family labor	3,421	7,413	0.16
Exchange labor	435	943	0.02
Rentals:			
Machine	418	905	0.02
Animals	796	1,725	0.04
Transport cost of inputs	2	5	a/
Repairs	70	152	a/
Food expense	31	66	a/
Landowner's share	8,065	17,474	0.37
FIXED COSTS	2,416	5,235	0.11
Land tax	247	535	0.01
Lease rental	251	544	0.01
Interest payment on crop loan	58	127	a/
Depreciation	127	275	0.01
Interest on operating capital	606	1,313	0.03
Rental value of owned land	1,127	2,441	0.05
TOTAL COSTS	35,206	76,281	1.62

a/ Less than P 0.01

Table 35. Average production costs and returns of cassava per hectare, Sulu, April 2013 - March 2014

Item	Per Hectare			Per Farm (P)	Per Kilogram (P)
	Quantity	Unit	Value (P)		
Production					
Cassava roots	6,320.51	kg	33,388	22,570	5.28
Planting materials (seed pieces/cuttings)	18,058	pc.	2,772	1,874	0.44 ^{b/}
Area harvested = 0.68 ha.					
Number of farms = 75					
CASH COSTS			1,494	1,010	0.24
Rentals:					
Animals			41	28	0.01
Landowner's share			27	18	a/
Repairs			1,407	951	0.22
Food expense			18	12	a/
NON-CASH COSTS			2,437	1,648	0.39
Planting materials (seed pieces/cuttings)	14,613	pc.	2,255	1,524	0.36
Hired labor	0.22	manday	68	46	0.01
Harvesters' share	10.36	kg	57	38	0.01
Rentals:					
Land	7.89	kg	44	30	0.01
Cassava	7.89		44	30	0.01
Landowner's share	2.47	kg	13	9	a/
Cassava	2.47	kg.	13	9	a/
IMPUTED COSTS			11,671	7,890	1.85
Planting Materials	3,745	pc.	458	310	0.07
Operator labor	16.64	manday	2,664	1,801	0.42
Family labor	47.86	manday	7,993	5,404	1.26
Exchange labor	0.55	manday	79	54	0.01
Depreciation			476	322	0.08
TOTAL COSTS			15,603	10,547	2.47
GROSS RETURNS			36,159	24,444	5.72
RETURNS ABOVE CASH COSTS			34,665	23,434	5.48
RETURNS ABOVE CASH AND NON-CASH COSTS			32,228	21,786	5.10
NET RETURNS			20,557	13,896	3.25
NET PROFIT-COST RATIO			1.32	1.32	1.32

a/ Less than P 0.01

b/ Per piece

Table 36. Average variable and fixed production costs of cassava, Sulu, April 2013 - March 2014

(in peso)

Item	Per Hectare	Per Farm	Per Kilogram
VARIABLE COSTS	15,082	10,196	2.39
Planting materials (seed pieces/cuttings)	2,713	1,834	0.43
Labor			
Hired labor	68	46	0.01
Operator labor	2,664	1,801	0.42
Family labor	7,993	5,404	1.26
Exchange labor	79	54	0.01
Rentals:			
Animals	41	28	0.01
Repairs	1,407	951	0.22
Food expense	18	12	a/
Harvesters' share	57	38	0.01
Landowner's share	40	27	a/
FIXED COSTS	520	352	0.08
Lease rental	44	30	a/
Depreciation	476	322	0.08
TOTAL COSTS	15,603	10,547	2.47

a/ Less than P 0.01

Table 37. Inter-provincial comparison of yield and input usage per hectare for cassava production, selected provinces, April 2013 - March 2014

Province	Yield (kg/ha.)	Area Harvested (ha.)	Planting Materials (pieces)	Fertilizer (kg/ha.)	Labor (manday/ha.)
All Provinces	18,568	0.94	11,261	296.74	77.48
Camarines Sur	7,454	0.36	8,995	23.65	76.93
Bohol	12,910	0.83	10,132	502.09	69.56
Bukidnon	28,027	1.14	15,824	62.23	68.31
Basilan	16,829	0.49	21,181		107.92
Lanao del Sur	21,790	2.17	5,222	545.69	82.37
Sulu	6,321	0.68	18,358		65.33

Table 38 a. Inter-provincial comparison of average production costs and returns of cassava per hectare by major cost item, selected provinces, April 2013 - March 2014

(in peso)

Province	Cash Costs	Non-Cash Costs	Imputed Costs	Total Costs	Gross Returns
All Provinces	18,052	935	13,503	32,490	56,620
Camarines Sur	5,016	2,369	20,784	28,169	40,087
Bohol	22,837	468	10,647	33,952	50,924
Bukidnon	31,049	503	9,601	41,154	76,227
Basilan	1,255	3,132	19,840	24,227	90,053
Lanao del Sur	20,462	142	14,602	35,206	50,070
Sulu	1,494	2,437	11,671	15,603	36,159

Table 38 b. Inter-provincial comparison of profitability of cassava production per hectare, selected provinces, April 2013 - March 2014

(in peso)

Province	Returns Above Cash Costs	Returns Above Cash and Non-cash Costs	Net Returns	Net Profit-Cost Ratio
All Provinces	38,568	37,634	24,131	0.74
Camarines Sur	35,071	32,702	11,918	0.42
Bohol	28,087	27,619	16,972	0.50
Bukidnon	45,178	44,675	35,074	0.85
Basilan	88,799	85,666	65,827	2.72
Lanao del Sur	29,607	29,465	14,863	0.42
Sulu	34,665	32,228	20,557	1.32

Table 39. Percentage distribution of cassava produce by disposition item, selected provinces, April 2013 - March 2014

Province	Sold to Trader	Sold to Processor of Food	Sold to Processor of Feeds	Harvesters' Share	Other Laborers' Share	Landowner's Share
All Provinces	11.99	54.38	29.11	0.02	0.02	0.13
Camarines Sur	19.40	14.18	47.64	0.11		2.72
Bohol	33.18	60.30	4.44	0.14		0.20
Bukidnon	13.68	1.19	85.00			0.13
Basilan	16.35	45.67			0.09	
Lanao del Sur		96.44	3.53			
Sulu	65.92	14.05		0.16	0.40	0.08

Table 39. (Concluded)

Province	For Home Consumption	For Home-Based Processing	Given Away	Used / To be Used for Feeds	Wastage	Others ^{a/}
All Provinces	1.57	1.70	0.85	0.09	0.12	0.01
Camarines Sur	4.52	1.99	6.91	2.46	0.04	0.04
Bohol	0.32	0.25	0.40	0.28	0.50	
Bukidnon	b/		b/		b/	
Basilan	13.97	18.49	5.43			
Lanao del Sur	0.03					
Sulu	7.80	4.57	5.16	0.05	1.66	0.12

a/ Include: land lease/rental and rental of animals

b/ Less than 0.01 percent

Table 40 a. Percentage distribution of cassava farmers reporting on current level of production in comparison with the same period last year, selected provinces, 2013 and 2014

Province	Higher this year	Lower this year	About the same	No point of comparison
All Provinces	19.56	22.22	50.67	7.33
Camarines Sur	14.67	10.67	66.67	8.00
Bohol	28.00	41.33	12.00	18.67
Bukidnon	24.00	30.67	36.00	9.33
Basilan	24.00	4.00	65.33	6.67
Lanao del Sur	24.00	24.00	52.00	
Sulu	2.67	22.67	72.00	1.33

Table 40 b. Percentage of cassava farmers with higher volume of production this year by reason for change in production, selected provinces, 2013 and 2014

Province	Reasons for change in production					
	Increase in Area	Good Weather Condition	Absence of Pest and Diseases	Good Quality of Planting Materials	Used Fertilizer	Proper Farm Management
All Provinces	29.55	17.05	4.55	29.55	34.09	10.23
Camarines Sur	27.27			72.73		
Bohol	19.05	38.10	9.52	19.05	42.86	4.76
Bukidnon		11.11	5.56	66.67	27.78	5.56
Basilan	94.44			5.56		
Lanao del Sur	5.56	27.78		5.56	88.89	38.89
Sulu	50.00		50.00			

Table 40 c. Percentage of cassava farmers with lower volume of production this year by reason for change in production, selected provinces, 2013 and 2014

Province	Reasons for change in production					
	Decrease In Area	Bad Weather Condition	Occurrence of Pests and Diseases	Low Quality of Planting Materials	Did Not Use Fertilizer	Poor Soil Condition
All Provinces	10.00	46.00	13.00	8.00	30.00	12.00
Camarines Sur	12.50	25.00		12.50		50.00
Bohol	6.45	58.06	12.90	6.45	38.71	19.35
Bukidnon	13.04	78.26	8.70	17.39	13.04	
Basilan		33.33				33.33
Lanao del Sur		5.56		5.56	83.33	5.56
Sulu	23.53	35.29	41.18			

Table 41. Percentage of cassava farmers reporting problems on production, selected provinces, April 2013 - March 2014

Province	Occurrence of Pests and Diseases	High Cost of Inputs	Bad Weather/ Calamities	Lack of Capital	Rough or Poor Road / Inadequate Transport Facilities	Inadequate Supply of Water / Irrigation Problem	Poor Soil Condition	Theft
All Provinces	12.00	25.33	34.89	36.44	16.22	0.22	8.89	0.89
Camarines Sur	32.00		13.33	14.67	28.00		29.33	4.00
Bohol	16.00	21.33	58.67	45.33	12.00		14.67	1.33
Bukidnon	9.33	30.67	65.33	12.00	8.00		2.67	
Basilan		20.00	1.33	69.33	21.33		4.00	
Lanao del Sur	2.67	80.00	37.33	53.33	28.00			
Sulu	12.00		33.33	24.00		1.33	2.67	

Table 42. Percentage of cassava farmers who sold produce to major buyer, selected provinces, April 2013 - March 2014

Province	Traders				Processor	Cooperative	Consumer
	Agent	Wholesaler	Wholesaler-retailer	Assembler			
All Provinces	10.00	12.22	7.11	0.89	52.22	2.44	15.11
Camarines Sur	1.33	21.33	26.67		20.00	10.67	18.67
Bohol		26.67		2.67	68.00		4.00
Bukidnon	5.33	6.67	6.67	2.67	77.33		
Basilan	8.00				49.33		38.67
Lanao del Sur					97.33	2.67	
Sulu	45.33	18.67	9.33		1.33	1.33	29.33

Table 43. Percentage of cassava farmers reporting problems on marketing of produce, selected provinces, April 2013 - March 2014

Province	Instability of Prices	Rough Roads/High Transport Cost	Low Price of Produce	Limited Buyer/ Market Outlet	Lack of Marketing Information
All Provinces	52.00	20.22	42.89	8.00	6.22
Camarines Sur	44.00	30.67	80.00	26.67	14.67
Bohol	33.33	17.33	46.67	1.33	18.67
Bukidnon	61.33	18.67	38.67	1.33	
Basilan	66.67	18.67	1.33		1.33
Lanao del Sur	42.67	29.33	72.00	18.67	1.33
Sulu	64.00	6.67	18.67		1.33

Table 44. Percentage of cassava farmers who availed of loans for cassava production and by source of loan, selected provinces, April 2013 - March 2014

Province	Percentage of Farmers Who Availed of Loan	Sources			
		Cooperative	Bank	Private Individual	Trader
All Provinces	7.33	18.18	12.12	30.30	39.39
Camarines Sur					
Bohol	20.00	13.33		60.00	26.67
Bukidnon	20.00	6.67	26.67	6.67	60.00
Basilan					
Lanao del Sur	4.00	100.00			
Sulu					

Table 45 a. Percentage of cassava farmers who were aware and availed of benefit from government programs/interventions in cassava production, selected provinces, April 2013 - March 2014

Province	Aware of Government Programs/Interventions	Availed Government Programs/Interventions
All Provinces	15.78	22.54
Camarines Sur	38.67	13.79
Bohol	36.00	14.81
Bukidnon	12.00	22.22
Basilan		
Lanao del Sur	8.00	100.00
Sulu		

Table 45 b. Percentage of cassava farmers who received benefit from government programs/ interventions on cassava production, selected provinces, April 2013 - March 2014

Province	Planting Materials	Fertilizer and Other Inputs	Training on Farming Technology	Post - harvest Facilities	Marketing Support	Loans
All Provinces	43.75	18.75	75.00	6.25	31.25	25.00
Camarines Sur	75.00		50.00			
Bohol	75.00	50.00	100.00		25.00	
Bukidnon	50.00	50.00				
Basilan						
Lanao del Sur			100.00	16.67	66.67	66.67
Sulu						

Table 45 c. Percentage of cassava farmers who used the benefit received and increased income, selected provinces, April 2013 - March 2014

Province	Used the Benefit Received from the Government	Increased Income
All Provinces	75.00	83.33
Camarines Sur	75.00	100.00
Bohol	25.00	100.00
Bukidnon	100.00	
Basilan		
Lanao del Sur	100.00	100.00
Sulu		

Table 46. Percentage of cassava farmers by perceived effect of climate change on their cassava farming, selected provinces, April 2013 - March 2014

Province	Affected by Climate Change	Effect			
		Change in Cropping Pattern	Increase in Input Usage	Decrease in Yield	Decrease in Frequency of Plowing
All Provinces	38.22	29.07	18.60	64.53	16.86
Camarines Sur	25.33	68.42		31.58	
Bohol	90.67	33.82	17.65	85.29	25.00
Bukidnon	24.00	55.56	55.56	5.56	
Basilan	21.33	6.25		93.75	
Lanao del Sur	45.33		23.53	55.88	35.29
Sulu	22.67	17.65	11.76	70.59	

Table 47. Percentage of cassava farmers who were members of farmers' organization and by type of benefit received, selected provinces, April 2013 - March 2014

Province	Members of Farmers' Organization	Benefits received			
		Training/ Seminars	Financial/ Credit Support	Inputs Support	Marketing Support
All Provinces	5.56	92.00	28.00	20.00	20.00
Camarines Sur	21.33	93.75			
Bohol					
Bukidnon	4.00	66.67	33.33	33.33	
Basilan					
Lanao del Sur	8.00	100.00	100.00	66.67	83.33
Sulu					

Table 48. Percentage distribution of cassava farmers reporting on the plan of farm operations, selected provinces, April 2013 - March 2014

Province	Maintain Current Operations	Expand Operations	Decrease Farm Area
All Provinces	59.33	40.44	0.22
Camarines Sur	96.00	4.00	
Bohol	78.67	20.00	1.33
Bukidnon	46.67	53.33	
Basilan	20.00	80.00	
Lanao del Sur	44.00	56.00	
Sulu	70.67	29.33	

Table 49. Percentage of cassava farmers reporting on the recommendations to further improve the cassava production, selected provinces, April 2013 - March 2014

Province	Price Support	Infrastructure Facilities	Regulate Price of Farm Inputs	Financial Support	Soil Testing/ Analysis
All Provinces	57.78	15.33	18.44	54.89	15.11
Camarines Sur	64.00	41.33		21.33	22.67
Bohol	52.00	29.33	24.00	81.33	29.33
Bukidnon	65.33		34.67	30.67	2.67
Basilan	14.67		1.33	93.33	
Lanao del Sur	88.00	16.00	46.67	84.00	32.00
Sulu	62.67	5.33	4.00	18.67	4.00

Table 49. (Concluded)

Province	Land Reform Program	Environmental Concern	New/ Modern Farming Technologies	Input Support
All Provinces	4.89	0.22	32.00	6.44
Camarines Sur	4.00		52.00	
Bohol	9.33	1.33	64.00	10.67
Bukidnon			54.67	1.33
Basilan			1.33	1.33
Lanao del Sur	14.67		20.00	25.33
Sulu	1.33			

References

Costs and Returns of Tilapia Production September 2011. BAS

3rd Edition Metadata for National Agricultural Statistics in the Philippines. BAS

Food Staples Sufficiency Program (FSSP) 2011-2016. DA

Philippine Standard Occupational Classification (PSOC),2007. NSO

Republic of the Philippines
Philippine Statistics Authority
Ben-Lor Bldg., 1184 Quezon Avenue, Quezon City
Agricultural Accounts and Statistical Indicators Division
Tel. No. 372-3823

aasid.bas@gmail.com
<http://www.bas.gov.ph>