



Republic of the Philippines
Department of Agriculture

Upland Development Programme in
Southern Mindanao (UDP)

**A MARKETING EFFICIENCY STUDY
ON**

POTATO

**IN SITIO GLANDANG, KABLON, TUPI,
SOUTH COTABATO**

MAY 2001

PREFACE

This report is one of a series of market efficiency studies conducted in the UDP-covered areas for selected commodities. The marketing efficiency of potato in Sitio Glandang, Kablon, Tupi, South Cotabato was evaluated through the deconstruction of existing marketing margins. Recommendations to improve marketing efficiency are herein offered.

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TABLE OF CONTENTS

	Page number
Preface	i
Acknowledgements	ii
Table of Contents	iii
Definition of Terms	iv
Introduction	1
Marketing System of Potato	3
Strengths and Weaknesses	9
Other Key Findings	10
Conclusion	10
Recommendations	10
References	11
Appendices	
A. Cost and Returns per unit of potato in Sitio Glandang, Kablon	12
B. Breakdown of costs per unit of potato in Sitio Glandang, Kablon	13

DEFINITION OF TERMS

Cash costs	-	costs where actual money is involved.
Cash returns	-	the earnings, where actual money is involved, from the sale of the farm produce.
Depreciation	-	the expense brought about by the wear and tear of a piece of equipment, building or tool used in an enterprise for a given period of time.
Exchange labor	-	the value, non-monetary in nature, of the work (in man-days) put in by neighbors, friends or other laborers in exchange for the farmers help with similar farm activities in their respective farms.
Hired labor	-	the cash expense for engaging the services of farm laborers.
Home consumption	-	the value, non-monetary in nature, of the farm produce consumed by the farmer and his family.
Losses/shrinkage of produce	-	the value, non-monetary in nature, of the damages and spoilage sustained by the produce.
Market information	-	basic information on prices and quantities traded of major commodities, from all markets—assembly, wholesale and retail.
Marketing channel	-	the inter-organizational system composed of interdependent institutions tasked in moving the product from production to consumption.
Marketing efficiency	-	the maximization of the input-output relationship where inputs refer to resources (land, labor, capital) used in moving the products from point of consumption to the point of production and output referring to consumer satisfaction on goods and services made available in the market.
Marketing margin	-	the difference in prices between the different levels of the marketing system.
Marketing	-	series of services performed in moving the product from the point of production to the point of consumption.

Net farm income	-	returns of the use of capital and labor. The overall profit of the farm after all the expenses, cash and non-cash, have been paid off.
Non-cash costs	-	costs items used in the production process wherein no direct outlays occurred or the costs incurred are not monetary in nature.
Non-cash returns	-	the value, non-monetary in nature, of the farm produce consumed by the farmer and his family or those given away.
Opportunity cost of capital	-	the price of foregone opportunity in the use of the capital invested in the enterprise. It is usually pegged at the current savings interest rate.
Point of consumption	-	last sale of the product.
Point of production	-	point of first sale.
Profit margin	-	the return to the middlemen for their entrepreneurship, the risks and the cost of money.
Return on investment	-	measures the amount of cash that the entrepreneur gets from the capital investment after first paying the opportunity expenses on the value of family labor and management. It also determines how much money the producer got in return for every one peso invested.
Saved for seeds	-	the value, non-monetary in nature, of the farm produce kept by the farmer for use as planting material in the following production cycles.
Unpaid family labor	-	also called own labor. The value, non-monetary in nature, of work (valued in man-days) by the farmer and his family.

POTATO

INTRODUCTION

1. Potato (*Solanum tuberosum L.*) granola cultivar is the only potato variety commercially grown in Sitio Glandang, Kablon, Tupi in the Province of South Cotabato. There is no distinct planting and harvesting season for potato and it can be planted as often as monthly, depending only on land and availability of capital. Harvesting of potatoes, therefore, is year-round.
2. Capital and labor-intensive, potato production starts at germination when the potato seeds are prepared for sprouting four months before planting. At that stage, fungicides are already needed to prevent diseases. A complete crop cycle takes seven months, the fourth month of which the seed tubers are transplanted to the soil.
3. Potato thrives best on well-drained, sandy loam to clay loam soils with a slightly basic pH, conditions which Sitio Glandang, Kablon satisfy.
4. Constant land and crop maintenance, fertilization and irrigation are needed along with high input use to reach the ideal yield of 30 metric tons per hectare every crop cycle, according to the Farmers Information and Technology Services (FITS) pamphlet on potato production. Unfortunately, production averages only 704.65 kilograms per hectare every crop cycle. The average area planted to potato in Sitio Glandang, Kablon is 3.29 hectares per farmer.
5. The marketing efficiency study for potato in Sitio Glandang, Kablon was conducted last March 7, 2001.

Objectives

5. The main objective of the study is to assess the impact of existing marketing systems of potato vis-à-vis income of the farmers.
6. Specifically, the study aims to determine the levels of participants in the marketing chain of potato;
7. Determine the marketing practices involved in terms of storage, handling, pricing, delivery systems and terms of payment;
8. Determine the percentage of consumer price that the producer receives, exclusive of production costs through the deconstruction of marketing margins of potato at each level in the system;
9. Identify strengths and weaknesses of the existing marketing system of potato; and
10. Determine appropriate marketing interventions needed to improve economic efficiency of potato in the identified area.

Methodology

11. From the initial agribusiness profile of UDP, Sitio Glandang was identified as the sole potato-producing area among the UDP areas in South Cotabato.
12. Purposive sampling was done and of the 17 identified potato producers in the area, seven (41%) were interviewed for the study. The farmers were asked about their production and marketing practices, volume and value of sales, production and marketing costs of potato. They were also asked on available market information with emphasis on what they need to know to improve their production and marketing practices, thereby increasing the farmers' income.
13. The respective buyers of potato from each farmer were then traced accordingly.
14. The traders were, in turn, asked about their marketing costs, sales and the problems and constraints they have encountered in the marketing of the commodities.
15. The marketing margins were then deconstructed and the profitability was of each marketing participant's enterprise was also analysed. In the case of the farmers, the Net Farm Income (NFI) was determined. An NFI greater than zero (0) would mean that the production and marketing activities of the potato farm is profitable, whereas an NFI less than zero (0) would mean that the farm is at a loss.
16. On the part of the trader, the Return on Investment (ROI) was compared with the opportunity cost of capital, pegged at the existing current savings interest rate of eight percent (8%) per annum. A ROI higher than the opportunity cost of capital would mean that marketing potato is more profitable than just saving the trader's money in a bank, while a ROI less than the opportunity cost of capital would mean that it would be more profitable for the trader to invest his money in a bank rather than spend it on marketing potatoes.
17. The percent share to the consumer peso of each marketing participant was also determined by getting the percentage of the marketing participant's selling price (in the case of traders, less their buying price) relative to the final buying price of the consumer. This indicates the proportion of the final buying price that goes to each marketing participant in potato.
18. Moreover, focused group discussions (FGDs) with key informants and selected farmers were conducted to probe into the importance and the demand for market information in each province. This provided rapid feedback on the available market information and the information dissemination strategies existing in the area.
19. Also, key informants such as the Municipal Agriculturists and the Agricultural Technicians were interviewed to obtain an overview of the local agriculture industry.

Limitations and Constraints

16. During the interviews, it was observed that the producers relied on their memories in recalling their past production level, income, farm tools and equipment. There were no record-keeping practices. Thus the cost and return that were analysed were only estimates. The Return on Investment (ROI) was excluded on the analysis of the farmer income due to the ambiguity of the values arrived at. This is mainly due to the fact that some factors on capital investment were not properly quantified in the study. For instance, land valuation was excluded because none of the farmers hold titles to the land that they cultivate. Land, therefore, was not considered a fixed investment in this enterprise and was merely considered as an expense through the credit of land cost (land tax if owned, rent if tenanted).

17. Anecdotal evidence has shown that another marketing system exists in the area. However, no farmers participating in this alternative marketing system was interviewed for the study. Nevertheless, this study has endeavoured to briefly describe this alternative marketing system

18. In the marketing aspect, the respondents interviewed were the middlemen named by the producers. Most of the respondents interviewed also based their answers on their memories since they do not keep records regarding their marketing operations.

19. Lastly, the size of the potato market, specifically, the estimation of demand was not included in the study.

Margin of Error

20. Aside from the UDP Agribusiness Profile, there are no other available data on the population size of potato producers in the area. The margin of error on the analysis, therefore, cannot be established since the formula requires not only the sample size, but the population size as well.

MARKETING SYSTEM OF POTATO

Marketing channels

21. The marketing participants involved in the potato marketing system in Sitio Glandang, Kablon are as follows:

- a. Farmer-retailers

A person engaged in potato production for sustenance or commercial purposes. They sell bulk (97.2%) of their produce to retailers and retail an average of 2.79% of the potato themselves; and

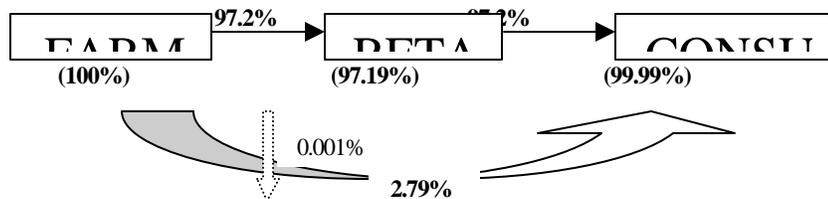
b. Retailers

A trader, usually based in the General Santos City Public Market, who buys potatoes from the farmers and sells them to the consumers.

22. Another marketing system identified, although no farmers operating under this system were interviewed for the study, was a modified contract-buying system where the traders lend money to the farmers to finance personal or family needs, as well as the farmer's potato production. This financing would be in exchange for "buying rights" on the part of the traders such that the farmer's harvest would be bought by the traders at a price that the trader dictates. Unfortunately, the price is usually less than what the other farmers, who do not have this financing-trader tie up. After sale, only then would the farmer be able to repay his debt and the corresponding interest payment.

23. Based on farmer interviews in the area, of the total 16,248.6 kilograms of potato harvested during the month of February 2001, fifteen thousand one hundred ninety kilograms (15,190 kg) were sold by the farmers. This study traced this amount from the farm to the retailers and the following product flow was established:

Figure 1. Product flow of Potato, Glandang, Kablon, Tupi, 2001.



Selling price (P/kg):

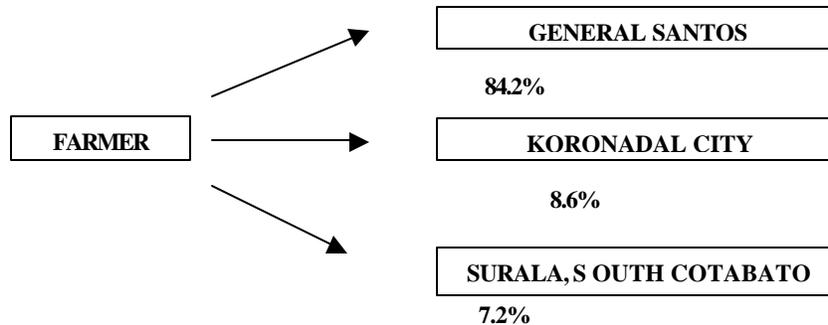
Farmer	Retailer
Case 1= 32.50	na
Case 2= 23.50	26.88

24. There were two marketing chains of potato established in Sitio Glandang. The first is the direct retailing of the farmers to the consumers (Case 1) and the other is the chain that involves the retailer (Case 2). A big amount (97.2%) of the potatoes are sold to the retailers since farmers are not capable of retailing all their produce because of limited time and labor to peddle it themselves. Farmers, in this case, are only taking advantage of the time that they are in the city, in most cases for only a day. Also note that minimal losses were incurred during the transport of the potatoes from the farm to the retailer.

25. Note that the minimal losses (0.001%) during transportation are also accounted for.

26. Similarly, Figure 2 illustrates the geographic flow of the potato from the farm to the end-marketing channel.

Figure 2. Geographical flow of Potato, Glandang, Kablon, Tupi, 2001.



26. On isolated cases, the potatoes are brought to either Surala (7.2%) or Koronadal City (8.6%) and are sold to retailers based at the respective public markets. Bulk (84.2%) of the potatoes, however, are brought to General Santos City and sold either directly to the consumers or to the retailers.

Marketing Practices and Costs

27. Potato is harvested 100 days after planting. These are then air-dried for five to seven days then sorted according to sizes. Sorting is crudely done and “eyeball” estimate is done to determine the grade of the potato. On the average, percentages in production according to grades are:

- ?? 25% for the extra large;
- ?? 50% for the big and medium-sized; and
- ?? 25% for the small-sized potatoes.

28. The cost of labor for sorting is pegged at P100 per man-day and food at a daily sorting rate of 10 sacks (700 kilograms).

29. The potatoes are then sacked (70kg/sack), at a labor cost of P80 per man-day, and then hauled or moved from the farm to Sitio Glandang proper. Hauling, by horse, costs P20-50 per sack (P0.29-0.71 per kilogram) depending on the distance of the farm from the sitio proper.

30. Three times a week, the barangay holds a market day where traders visit the area and do most of their buying activities. During these market days, jeepneys bound for General Santos City are also available. These are the days when the potatoes are brought down from the farm or the farmers’ houses and loaded onto the jeepneys at a cost of P15 per sack (P0.21 per kilogram). The fare from Glandang to General Santos City is P25 per sack (P0.36 per kilogram).

31. At the General Santos City jeepney terminal, the sacks are unloaded for a fee of P5 per sack (P0.07 per kilogram), loaded on carts and brought to the public market at a cost of P2-5 per sack (P0.03-0.07 per kilogram).
32. At the public market, the potatoes are brought to the stalls of potato retailers where it is sold at the average price of P19.29 per kilogram (Farmer case 2). The farmers for their own retail activities keep one to two sacks within the day (Farmer Case 1).
33. Farmers pick a spot along the pavement and peddle the potatoes at P30-35/kg (Farmer Case 1).
34. The farmers sell directly to the retailers. Bulk (97%) of the potatoes sold by retailers was delivered to their market stalls which thereby eliminating transportation costs on the part of the retailer.
35. Upon purchase of the potatoes, they are graded according to size and put on display in their market stalls. Consumers/end-buyers purchase the potatoes at the market stall at an average price of P26.88/kg.
36. Table 1 summarizes the marketing costs for every marketing level.

Table 1. Marketing cost for different marketing levels of potato (P/kg).

ACTIVITY	FARMER	RETAILER
Cleaning	0.03	<i>na</i>
Grading/Sorting	0.08	<i>na</i>
Packing	0.02	<i>na</i>
Transportation	1.11	<i>na</i>
Labor	<i>na</i>	0.25
Supplies and Materials	<i>na</i>	0.24
Fees and payments	<i>na</i>	0.08
Non-cash costs	<i>na</i>	0.06
TOTAL	1.24	0.63

37. Note that the marketing cost of farmer is higher than that of the retailer. This is mainly due to the high transportation cost (P1.11/kg) borne by the farmers since all of the potatoes are delivered to the buyer.
38. On the retailer's side, major expenses in marketing are labor and supplies and materials. Labor is the expense incurred by retailer in hiring the stall-keepers who are responsible in minding the store.

39. Usually polyethylene bags that could hold up to 5 kilograms of potatoes are used as packaging materials. Non-cash costs for the retailers include the depreciation cost of equipment and the value of labor put in by the owner/manager.

Price Formation

40. Local farm-gate prices of potato were determined to be erratic and unpredictable. Price differences range from P0.50 to P13 per kilogram at intervals as short as three days. No price trend was determined since neither the farmers nor the traders could recall the monthly prices of potato. It was, however, discussed that one reason why potato prices behave that way is because the General Santos City market is prone to market saturation since it is also the market of other potato-producing municipalities in the region.

41. Estimated farm-gates prices per kilogram in February 2001 are as follows:

- ?? Extra Large (56-75mm, 100-110g/pc) – P 23;
- ?? Large (46-55mm, 86-99g/pc) –P 21;
- ?? Medium (36-45mm, 80-85g/pc)-P 21;
- ?? Small (26-35mm, 50-79g/pc)-P 16

42. Likewise, retail prices also vary. The retail prices range from P25 to P35 per kilogram.

43. On the case of the farmers with the financing-trader tie up, though none were interviewed for this study but anecdotal evidence show, that the farm-gate price received by such farmers is P0.20 to P1.00 per kilogram lower than the price other farmers without trader financing, receive.

Marketing Margins

44. A comparison between the Net Farm Income (NFI) of the farmers for the two cases show that the profit or income of the farmer is higher when it is directly retailed to the consumers (Table 2). However, the farmers cannot sell a large quantity under case 2 because they are only capable of peddling a limited amount (1 to 2 sacks or 140 kilograms) within a day.

Table 2. Marketing margins and income for potato at different marketing levels.

ITEM	CASE 1	CASE 2	
	Farmer	Farmer	Retailer
Selling Price (P/kg)	32.50	23.50	26.88
Buying Price (P/kg)	<i>na</i>	<i>na</i>	23.50
Marketing Margin (P/kg)	<i>na</i>	<i>na</i>	3.38
Marketing Cost (P/kg)	1.24	1.24	0.63
Profit Margin (P/kg)	<i>na</i>	<i>na</i>	2.75

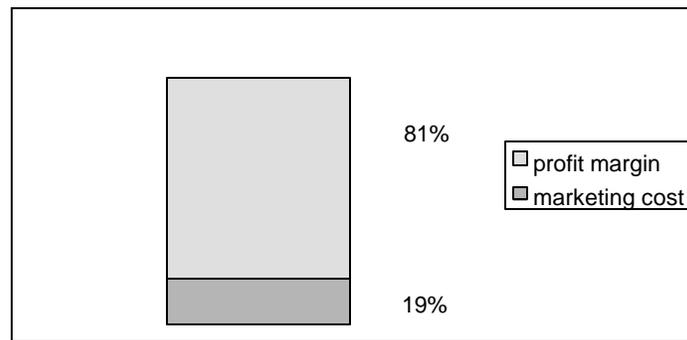
Net Farm Income* (NFI) (P/kg)	26.06	17.06	<i>na</i>
MC as % of MM	<i>na</i>	<i>na</i>	19%
PM as % of MM	<i>na</i>	<i>na</i>	81%
% ROI	<i>nil</i>	<i>nil</i>	62.64%
Opportunity Cost of Capital	<i>na</i>	<i>na</i>	8%

*Shown in detail on Appendix A.

45. The total value added to the potatoes per kilogram as it moves along one marketing channel to another is indicated by the marketing margin (MM), shown on the table below. In this case, the marketing margin of the retailer is P3.38 per kilogram 19% of which is the marketing cost and 81% is the profit.

46. To illustrate the marketing margin of the retailer, Figure 3 shows the percentage of the marketing cost and the profit margin relative to the marketing margin.

Figure 3. Marketing margin of a potato retailer, Sitio Glandang, Kablon.

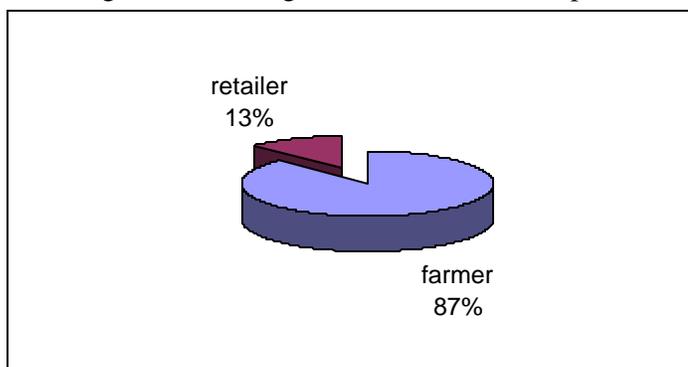


47. Table 3 and Figure 4 shows the breakdown of the consumer peso.

Table 3. Percentage share to the consumer peso

MARKETING LEVEL	SELLING PRICE (P/kg)	% SHARE
Farmer	23.50	87
Retailers	26.88	13

Figure 4. Percentage share of the consumer peso.



48. The percentage of the consumer peso, as indicated on Table 3, means that 87% and 13 percent of the final buying price (P26.88/kg) goes to the farmer and the retailer, respectively.

STRENGTHS AND WEAKNESSES

49. The only strength in the marketing of potato in Sitio Glandang is the established marketing system. This means that there are already accepted buyers for potato grown in Sitio Glandang such that farmers would no longer have the problem of looking for prospective buyers of their produce.

50. Also, since there is an established market day three times a week, the farmers and traders are given a regular schedule of trade. This allows the farmer to time his harvest and transportation schedule so that passenger jeepneys bound for General Santos City are already available when he brings the potatoes down from his farm.

51. One weakness of the potato marketing system, however, is the rapid price fluctuation brought about by the influx of potatoes from other areas at unknown schedules. So it often happens that the farmers think they know the buying price of traders in the General Santos City market, only to be disappointed by recent and rapid change in price such that their price that they actually receive lower than what they originally expected.

OTHER KEY FINDINGS

52. Potato production in Sitio Glandang is relatively low. The average yield for a Sitio Glandang potato farm is only 686 kilograms per hectare while the FITS standard is 30,000 kilograms per hectare.

CONCLUSION

53. By analysing the Net Farm Income (NFI) of the farmer and the percent return on investment of the retailer, the conclusion that potato marketing, on both farmer and retail level, is efficient. This means that investing or engaging in production and marketing of potato in the study area are profitable and efficient.

54. Although production and marketing of potato in Glandang, Kablon is efficient, there are still some marketing problems or weaknesses that were identified. For instance, the rapid price fluctuation brought about by the influx of potatoes from other areas at unknown schedules confuses the farmers.

RECOMMENDATIONS

55. For the pricing problem, it is suggested that information on the supply capacities and schedule of other potato-growing areas be supplied to the farmers such that they would be able to time their harvests and their production on the occasions that no large deliveries of potato from neighbouring municipalities are schedule for sale in General Santos City.

56. It is also recommended that trading posts should be established so that potato harvests can be consolidated and sold to traders at a higher price given the larger volume. This can be done during the scheduled tri-weekly market days in Kablon so that there would already be traders in the barangay poblacion.

57. On the production side, technical trainings on production and post-harvest practices to increase potato production should be provided to the farmers.

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APPENDIX A. Cost and returns per unit of potato in Sitio Glandang, Kablon, Tupi.

ITEM	P/kg
RETURNS	
Cash	
Sales	23.75
Total Cash Returns (A)	23.75
Non-cash	
Home consumption	0.25
Given away	
Saved for seeds	1.27
Total Non-cash Returns (B)	1.52
TOTAL RETURNS (C)	25.27
COSTS	
Cash	
Planting material	2.92
Fertilizer	0.81
Pesticide	0.50
Hired labor	0.51
Transportation	0.79
Land cost	0.16
Interest payment	0.03
Total Cash Costs (D)	5.73
Non-cash	
Unpaid family and/or exchange labor	0.15
Depreciation	0.07
Losses/Shrinkage of produce	0.03
Opportunity cost of capital	0.46
Total Non-cash Costs (E)	0.71
TOTAL COSTS (F)	6.44
Net Returns Above Cash Costs (C-D)	19.54
Net Farm Income	18.83

APPENDIX B. Breakdown of costs per unit of potato in Sitio Glandang, Kablon.

ITEM	P/kg
I. Production Cost	
Land cost	0.16
Depreciation	0.07
Seeds	2.92
Fertilizers	0.81
Pesticides	0.53
Own labor	0.15
Hired labor	0.09
 Total Production Cost	 4.73
II. Marketing Cost	
A. Cleaning	
Hired labor	0.02
Losses/shrinkage	0.01
Sub-Total	0.03
B. Grading/Sorting	
Hired labor	0.06
Losses/shrinkage	0.02
Sub-Total	0.08
C. Packing	
Hired labor	0.02
Sub-Total	0.02
D. Transportation	
Hired labor	0.32
Transportation	0.79
Sub-Total	1.11
Total Marketing Cost	1.24
III. Opportunity cost of capital	0.46
 TOTAL COSTS	 6.44
