

The Economic Analysis of the Smallholders Grape Production and Marketing in Dodoma Municipal: A case study of Hombolo Ward

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Abstract- The study is aimed at evaluating production, marketing and income of small holder grape producers in Dodoma. The study used both primary and secondary data. A sample of 35 smallholders grape producers was randomly selected. Data were collected by using semi –structured questionnaires and analyzed by SPSS and Ms- Excel. Descriptive statistics was used to determine the frequencies and percentages whereby mean of Kgs/acre and mean income/acre were calculated to determine performance of the farmers.

Results indicate that female small holder farmers were more efficient as they produced 2000Kg/1.60 acre than males who produced 1480Kg/1.72Acre. Further analysis indicates that unmarried smallholders were more efficient (2000kg/1.00acre) compared to married ones who produced 1590 kg/1.75acre. Also, findings indicate that the youngest producers had the largest grape output (mean 2170kg/1.33 acre) compared to elders (1540 kg/1.75 acre). The results show that grape production was mostly practiced by people with low education level and each smallholder grape producers sold an average 1530kg per year which account for 91.4% of market share. However, majority of respondent (57.1%) replied that they sold their produces on credit basis and it takes more than 6 months to be paid. Major challenges faced by smallholder grape producers were decline of the quality of grape due to delayed payment, diseases and unreliable market whereby major strategies were to increase number of extension officers, increase the numbers of processing firms, enforcement of written contracts and establishment of grape board and cooperative union in order to organise farmers to form strong farming entity.

Index Terms- Smallholder, Grape Producers, Production, Marketing

I. INTRODUCTION

Grape is a non –climatic fruits, specifically a berry and from the deciduous woody vines of the genus *Vitis*. In Tanzania, grape is produced in Dodoma, as one of the biggest cash crops in the region. Grape production is the main stay for many farmers in Dodoma Municipal and the nearby districts of Chamwino and Kongwa. The urban Dodoma produces 70% of the grapes and rural Dodoma produces 30% (SNV Tanzania a report on fresh fruits, 2005). This crop has multi-usage such that it can be eaten raw or can be used for making jam, juice, jelly, wine, grape seed-extracts, raisins, vinegar and grape -seed oil. This crop is

considered as a symbol crop for Dodoma region. Grapes were introduced to Dodoma by the missionaries 1960. The first small wineries were started in Bihawana and Hombolo missions. These wineries produced communal wine for church purposes only. Historically, grape production in Dodoma can be traced back to 1963 when the Isanga prison, the oldest prison started growing grapevine. In this year the Isanga prison started with only four acres and three years later the crop was gradually introduced to the five villages namely Mpunguzi, Msalato, Nala, Nkulabi and Mundemu. Subsequently, the National Service Camp at Makutupora - Dodoma accepted the idea thus increasing the acreage and the yields rising high from the grapes to be consumed fresh as table grapes to wine production. The first government institution to invest much in wine production was Isanga prison which prompted the construction of a winery plant in 1969. This company was very famous in Africa and later became the sole buyer of grapes from farmers for wine processing. The establishments of a Makutupora research centre to determine appropriate types of grapes of wines and encouraged more and more farmers to come forward and open grape farms (<http://www.google.com> 25th march, 2014).

Grape is one of the world's largest fruits crops with approximately 67.5 million tones produced each year. Grape grows best in the Mediterranean type of climate with long relatively dry summers and mild winters. Worldwide, Grape is mainly meant for wine production however, a certain portion is dried into raisins and a major part is marketed yearly as fresh fruit, making table grapes one of the world's prominent fresh fruits crops (Khoshroo A. et al., 2013). In US the consumption of fresh grapes has increased from 2.9 pounds per person in 1970 to 7.9 pounds in 2009 (Economic Research Service (ESR), 2009). Moreover, grape is the most important and economical garden fruit crop in the world (Shahraki, Dahmardeh and Karbasi, 2012). In the year 2012, the US and Canadian market, price for fresh grapes jumped to \$1,340 per tons compared to those prices last peaked at \$986 per tons in 2006 (National Agricultural Statistic Services (NASS), 2013).

Regardless of potentiality of grapes, small holder grape growers in Tanzania are facing production, processing and marketing problems such as inadequate product quality, few processing plants or winery industry, low price, low incentives, low output, unreliable rainfall, insufficient agricultural extension services, shortage of buying posts, late payment, low labour productivity, poor infrastructure and poor-harvest management. Sometimes, some market actors violate set standard units of weights and product grades (MITM, 2008; and MAFC, 2006). As

a result farmers ending up having unreliable markets and receive low price for grapes produced. Lack of common price hinder the development of this crop in Tanzania, as most of the business people tend to provide the buying price (Price Maker) for themselves in such a way that the grape growers (Price Taker) continue to be enslaved and being poor. Glover and Kusterer (1990) argued that the market practices out of contract farming, buyer of crops can hold a monopoly position and exploit small-growers. Furthermore, investors especially wine processing industries purchase grapes from smallholder farmers on credit basis, hence money value of their produces keep on depreciating from period of harvesting to the time farmers receive money. The Ministry of Agriculture, Food Security and Cooperative (MAFC, 2006) pointed out agricultural problems like lack of skills in crop husbandry, low chemical fertilizers, delayed payments violated by crop buyers, the good example from Mtibwa Sugar Estates. Due to that, most of the grape farmers are living in very poor life. In this case smallholder farmers produce grapes without being certain of the market. During the grapes season, it is a common to see women carrying the dishes, boxes and plastic basins moving around in the Municipal streets selling their grapes. Such kind of business practices will not provide much profit to grape growers in order to reduce poverty for these farmers. These practices will not make grape farmers move forward or change their life standards, instead having only survival needs of life. Emanu and Gebremedhin (2007) argued that poor production handling and packing, imperfect pricing systems, and lack of transparency in market information are also among the impediments in the agricultural production and marketing. The Ministry of Industry, Trade and Marketing (MITM, 2008) argues that market constraints of smallholder farming were weak legal and regulatory framework on agricultural marketing; weak institutional set-up dealing with agricultural marketing; inadequate marketing research; inadequate marketing linkage; and inadequate capacities to utilize opportunities emerging in the domestic, regional and international markets and including preferential markets.

II. MATERIALS AND METHODS

Study Area

This study was carried out in Hombolo Ward in Dodoma region. The study targeted the smallholder grape producers found in this Ward. The choice of this study area was due to the fact that these Wards are among the areas which produce grapevine since 1960s. Demographically Hombolo Ward has 22,457 total number of population (National Census, 2012). The economic activities of this area are agriculture, business, office works, animal husbandry and hunting.

Research Design and Data Collection

The study used a cross sectional research design which involved collecting data at one point in time (Kothari, 2007). Both primary and secondary data collection techniques were used to accomplish this work. Primary data were collected through self administered structured questionnaires while secondary data were collected from journal, books, websites, reports and speeches. The questionnaires were structured with closed and opened ended questions with two sections. The first section of

the questions included respondents profile and the second section was about respondent's marketing channel, small holders' income, size of the farm, amount of grapes (Kg) per acre per annum and price of grapes per kg per years.

Sample Size and Sampling Techniques

Hombolo ward was purposively selected for this study because this ward was among the ward which produce a large quantity of grapes in Dodoma Municipal. Thereafter, simple random sampling was used to get respondents from smallholders grape producers. The probability sampling techniques was used because every grape producer had an equal chance of inclusion in the sample. A sample of 35 respondents of smallholders grape producers was randomly drawn from a sample frame list of 200 small holder grape producers. Moreover, the sample size of the study was based on the theory of central limit which assumes that any sample size greater than thirty (30) is a good representative of the population at 5 percent level.

Data Analysis

Data from field were coded and summarised using SPSS and Excel statistical computer programs. Both descriptive and quantitative data were analysed using Statistical Package for Social Science (SPSS) and Excel statistical computer programs. Descriptive statistics was used to determine the frequency of occurrences and percentages. Results of the analysis were presented descriptively in a tabular form followed by narrative description of the results.

III. RESULTS

Sex of smallholder farmers and mean output of grape produces

Descriptive statistics of sex of smallholder farmers was measured against the output per kilogram per acre per year as shown in Table 1. Logically, in production males produce more than females do. The mean for male smallholder farmers was 1480 kilograms of grapes per acre per year cultivated under mean of 1.72 acres. The female small holder farmers obtained a mean of 2000 kilogram of grape produce acre per year cultivated under mean of 1.60 acre. However, total mean of kilogram for the sample was 1630 cultivated under the mean acre of 1.69. These results indicate that female small holder farmers were leading in the grapes production. This was because females are more effective and efficient in doing things compared to the males. In this case the production of grapes accepts the theory of the influence of sex in production.

Table 1: Mean of Kilogram/Acre owned by Males and Females

Variables	Frequency	Percentage	Mean of Kgs	Mean acre
Male	25	71.4	1480	1.72
female	10	28.6	2000	1.60
Total	35	100	1630	1.69

Source: Field Data June, 2014

Marital status of smallholder farmers and mean of Kilogram/Acres

Descriptive statistics of marital status of smallholder farmers was measured against the output per kilogram per acre per year as shown in Table 2. Theoretically, married producers would have more output than single family this is because the married would have more labour force than single family and divorced small holder farmers. The findings showed that the unmarried smallholder farmers obtained the mean of 2000 kilograms of grapes, produced under a mean 1.00 acre. Furthermore, married small holder farmers obtained a mean of 1590 kilograms of grapes under a mean acre of 1.75 per year. Indeed, the results show that unmarried smallholder farmers were leading by obtaining a higher mean of grape produces in kilograms per acre per year (because they obtained the mean kilogram above the mean of total sample which is 1630 kilogram cultivated under mean acre of 1.69) compared to married smallholder farmers. This implies that unmarried producers devote most of their time in grape production compared to married ones.

Table 2: Mean of Kilograms/Acre per Marital Status

Variables	Frequency	Percentage	Mean of Kgs	Mean acre
Single	2	5.7	2000	1.00
Married	32	91.4	1590	1.75
Widow	1	2.9	2000	1.00
Total	35	100	1630	1.69

Source: Field Data June, 2014

Age of Smallholder Farmers and Mean of Kilograms per Acre

Principally, it is thought that young populations are more productive than old population. Table 3 shows the age of smallholders grape producers, the youngest age of smallholder farmers were aged between 18-34 years, elders aged between 35-64 and the oldest were aged above 64 indicating the variation of output in grape production. The young aged small holder farmers obtained the mean 2170 kilograms of grape produces per year under the mean acre of 1.33. The eldest grape producers obtained a mean 1540 kilograms of grapes per year under a mean of acre of 1.75. Similarly, the eldest grape producers obtained a mean of 1000 kilogram per year cultivated under mean acre of 2.00. The findings indicate that the youngest producers had the largest grape output per acre per year in the study areas compared to elders who obtained the grape output below the average of the total sample (1630 kg/1.69acre). This indicates that youngest small holder farmers engaged more and very efficient in grape production compared to the oldest small holder farmers.

Table 3: Age of Smallholders Farmers and Mean of Kilograms/Acre

Variables	Frequency	Percentage	Mean of Kgs	Mean acre
Age between 18-34	6	17	2170	1.33
Age	28	80	1540	1.75

between 35-64				
Age above 64	1	3	1000	2.00
Total	35	100	1630	1.69

Source: Field Data June, 2014 ***Significance at 95% of Confident Interval

Level of education of smallholder farmers and mean of kilogram/Acre

Logically educated farmers are expected to produce more compared to uneducated farmers. This is due to the fact that educated farmers can easily adopt new technology and techniques of production. Table 4 shows that smallholder farmers with primary level of education had their mean kilogram of grape produce at 1530, produced under mean of acres 1.95. The smallholder farmers with secondary level of education had the mean output of 2400 kilograms per acre per year, produced under a mean of acres 1.40. Furthermore, the smallholder farmers with higher level of education had mean output 1400 kilograms of grapes per year produced under a mean of acres 1.40. The results show that grape production was mostly practiced by people with low education and people with higher education were not effectively engaged in grape production (table 4). Thus, the higher the education the lower was the involvement in the agricultural sector.

Table 4: Level of education of smallholder farmers and mean of kilogram/Acre

Variables	Frequency	Percentage	Mean of Kgs	Mean acre
Informal Education	2	5.7	1000	2.00
Primary Education	19	54.3	1530	1.95
Secondary Education	5	14.3	2400	1.40
NACTE Education	4	11.4	1750	1.00
University Education	5	14.3	1400	1.40
Total	35	100	1630	1.69

Source: Field Data June, 2014 ***Significance at 95% of Confidence Interval

The Grapes Production Analysis in Dodoma Municipal

Dodoma Region is found in Central Plateau zone which is famous for production of fruits such as Grapes, Mango, Papaya, guava, baobab, tamarind and dates (Ministry of Agriculture and Food Security- Horticulture Unit, 2005). Grape is one of cash crops in Dodoma Municipal and a region at large. The urban Dodoma produces 70% of the grapes and rural 30% (SNV Tanzania Report on fresh fruits, 2005). Majority (100%) of smallholders grape producers in Dodoma produce grapes in their own land, contrary grapes is cash crops in Dodoma, production of grape is dominated by small holders farmers (table 5). The majority of smallholders grape producers (62.9%) surveyed had a

land size ranging between 2 and 5 acres. On average each smallholder producers produce 1630 kilogram per annum on average of 1.69 acre, however the result revealed that the longer year of growing grapes (2 years and above), the higher the grape production (table 5 below). This implies that the experienced

grape producers are better off in terms of production than the new ones.

Table 5: The Production Analysis of Grapes

Variables	Responses			Total
	Yes	No		
Do you own land for grape production?	(35)100%	0		35
How many acres (land size) do you use in grape production?	Less than 2 acres 12(34.3%)	Between 2 and 5 acres 22(62.9%)	Above 5 acres 1(2.9%)	35
	Less than 2 acres 12(1,920)	Between 2 and 5 acres 22(1,410)	Above 5 acres 1(3,000)	
Average kilogram per Acre/year per households for each categories				35
Year of growing grapes	Less than 2 years 3(8.6%)	Between 2 and 5 years 17(48.6%)	Between 5 and 10 years 15(42.9%)	35

Source: Field Data June, 2014

The Marketing of Grapes in Dodoma Municipal

Table 6 indicates the nature of sale transaction of grape produced in Dodoma region. The results showed that most grapes produced in Dodoma Municipal are moving through Producers---Retailer (Street Vendors) --- Market. During the survey, on average each smallholder grape producers sold over 2500 kilogram of their grapes direct to the market (Producers -----Spot market). This is equal to 5.7% of total grape sold per year. Furthermore, on average grapes each smallholder grape producers sold 3000 kilogram of grape per year through the marketing channel of Producers – Retailer (Street Vendors) –

Market, which is equal to 62.9% and on average each smallholder grape producers sold 1530 kilogram per year through Producers---Agents---processing firms, which account for 91.4% of marketed share. Although, most of grapes are sold through the Producers – Retailer (Street Vendors) – Market, still there is a big share of grapes which is sold to grape processing industry (winery). The data from Hombolo ward shows that marketing actors go to buy grapes at farm gate (table 6). Grape processing firms purchase more grapes than any other types of buyer (62.9%).

Table 6: Marketing of Grapes in Dodoma Municipal

Variables	Responses			Total no. of respondents
	Wholesalers	Processing firms	wholesalers and processing firm	
Where do you sale your grape produces?	3 (8.6%)	22(62.9%)	10(28.6%)	35
What is marketing channel of your grape produces?	producers-spot market 2(5.7%)	producers-Retailer - market 1(2.9%)	producers-agents-processing firms 32(91.4%)	35
Average kilograms sold per each marketing channel	2500	3000	1530	35

Source: Field Data June, 2014

Cost of Labour Used in Grape Production per Acre per Year

Table 7 indicates household labour cost used in grape production per acre/year. Smallholder grape producers incur different costs during production process. Majority of smallholder’s producer incur cost of land clearing which is above Tsh. 100,000. Similarly, more than a half (60%) of respondents incurs the cost of cultivation which is above Tsh. 250,000 and cost of planting which is above Tsh. 201,000. Moreover, the cost

of putting fertilizers, majority of respondents incurred the cost above Tsh.150,000 per acre and in case of pruning, majority incur the cost below tsh. 60,000. However, above two third of respondents indicate that pest control activity had the cost above Tsh. 151,000 and majority possess costs less than Tsh. 61,000 in harvesting, packaging and transporting (table 7).

Table 7: households Labour Cost (Tanzanian shilling) used in Grape Production per Acre per year

Variable	Reponses				Total no. of respondents
	T. shilling	T. shilling	T. shilling	T. shilling	
Land Clearing	0-100000	101, 000-200,000	201,000-500,000	Above 500,000	35
	10(28.6%)	14(40.0%)	9(25.7%)	2(5.7%)	
Cultivation	0-250,000	251,000-500,000	501,000-750,000	above 750,000	35
	4(11.4%)	21 (60%)	3(8.6%)	7(20.0%)	
Planting	0-200,000	201,000-400,000	401,000 - 800,000	above 800,000	35
	12(34.3%)	2(5.7%)	16(45.7%)	5(14.3%)	
Fertilizer	0-75,000	76,000-150,000	151,000-225,000	above 225,000	35
	3(8.6%)	5(14.3%)	8(22.9%)	19(54.2%)	
Pruning	0-20,000	21,000-40,000	41,000-60,000	Above 60,000	35
	6(17.1%)	7(20.0%)	7(20.0%)	15(42.9%)	
Pest Control	0-150,000	151,001-300,000	301,000-600,000		35
	5(14.2%)	12(34.3%)	18(51.5%)		
Harvesting	0-60,000	61,000-120,000	121,000-180,000		35
	22(62.9%)	8(22.9%)	5(14.3%)		
Packaging	0-30,000	31,000-60,000	above 90,000		35
	20(57.1%)	10(28.6%)	5(14.3%)		
Transporting	0-50,000	51,000-100,000	above 100,000	Nil	35
	7(20.0%)	6(17.1%)	2(5.7%)	20(57.1%)	

Source: Field Data June, 2014

Nature of Sale Transaction of Grapes in Dodoma

Table 8 below shows results of nature of sale transaction of grape produces. More than a half (57.1%) of respondents replied that they sale their produces on credit basis whereby majority (62.9%) of respondent said it takes more than 6 months to be paid. Majority (77.1%) of respondents replied to have a form of

agreement with buyers, even though it is not a written contract that could help them to hold the buyers accountable. Furthermore, producers replied that they do not get any assistance from buyers except the extension services from public extension officers.

Table 8 Nature of transaction of grapes

Variables	Responses			Total No. of Respondents
	cash basis	credit basis	cash and credit	
Mode of payment of grape produces	8(22.9%)	20(57.1%)	7(20%)	35
How long does it take to get cash since the point of sale?	less than 3 months	Between 3 and 6 months	more than 6 months	
	4(11.4%)	9(25.7%)	22(62.9%)	35
Do you have a written or oral form of agreement with the buyers?	Yes	No		35
	27(77.1%)	8(22.9%)		
What type of assistance do you get from buyers?	Training and technology	Extension Services	No assistance	35
	5(14.3%)	17(48.6%)	13(37.1%)	

Source: Field Data June, 2014

Income of Grape Producers per Acre per Annum

Table 9 below indicates respondents' level of income earned per year per acre. Thirty four percent (34.3%) of the respondents earn income less than Tsh. 5 million per year per acre and the rest earned income above Tsh.5 million per year per acre. More than a half (57.1%) of respondents said that grape production did no assist them to acquire wealth such as house or buy a car. However, for those who replied that grape production assisted to acquire wealth, their responses were as follows;- 40% said were able to build a house, 20% were able to buy a car, 14.3% mentioned that were able to own a car and build houses and

25.7% said were able to own house and send their children to school. On average the smallholder grape producer who owns the farm less than 2 acres was able to get an average 1,920 kilogram of grape outputs per acre per year and earn an average of Tsh. 2.42 million per year. Similarly, smallholder grape producers who own the farm between 2 and 5 acres were able to get an average of 1,410 kilogram of grape outputs per acre per year and were able to earn Tsh. 2.09 million per year. This result revealed that smallholder grape producers who own farms less than 2 acres were more efficiency than those who own above than 2 acres.

Table 9: Income of Grape Producers per Acre per Annum

Variables	Responses				Total No. of Respondents
	less than 5million	between 5mil and 10mil	between 10mil and 15million	above 15million	
Income earned/year/acre	12(34.3%)	8(22.9%)	11(31.4%)	4(11.4%)	35
Average income/acre/year	less than 2 acres	between 2 and 5 acres	above 5 acres		
	12(2.42Mil)	22(2.09mil)	1(2mil)		35
Average kg/Acre/year per households for each categories	Less than 2 acres	Between 2 and 5 acres	Above 5 acres		35
	12(1,920)	22(1,410)	1(3,000)		
Grape production assists to acquire wealth	Yes	No			35
	15(42.9%)	20(57.1%)			
Asset(s) acquired as result of grape production	houses	car	car and house	Own house and send children to school	35
	14(40%)	7(20.0%)	5(14.3%)	9(25.7%)	

Source: Field Data June, 2014

Trend of Price of Grapes per Kg

Table 10 below indicates the trend of price of grapes in Dodoma. The price of grapes in Dodoma Municipal tends to vary between Tsh.500 and tsh. 1000. The result indicates that more than a half (54.3%) of respondents replied that they sell their

grape on price ranging between Tsh. 501-800 with average kilogram of 1470 sold. The price of grape has been fluctuating from season to season depending on harvest and availability of buyers. However, in most cases they sell at price of Tsh.500 shilling.

Table: 10 Trend of Price of Grapes per Kilogram

Variables	Frequency	Percentage	Mean of Kilogram
Average range 501-800	19	54.3	1470
801-1,000	16	45.7	1810
Total	35	100	1630

Source: Field Data June, 2014

Production and Marketing Challenges

Table 11 show results of challenges facing smallholder grape producers in production and marketing of grapes. Majority of respondents (51.4%) explained that decline of the quality of grape due to delayed of payment was the major challenges faced by grape producers during production. Others (31.4%) explained that another challenge of grape production was diseases attack

such as fungus and the rest explained that grape production incurs high input prices such as insecticides. Furthermore, majority of respondents (42.9%) replied that processing firms delayed payment and 37.1% said that there is unreliable market for grape. The study findings, agreed by Mwakalinga and Massawe (2007) who argue that agricultural sector in Tanzania

faces a lot of problems like low price, low output and unreliable market, poor infrastructure and poor quality.

Table 11: Production and Marketing challenges

Variables	Responses			Total no. of respondent
Production challenges of grapes	Diseases attack eg. fungus	High price of Inputs such as insecticides	Decline quality of grapes due to delayed payment	
	11(31.4%)	6(17.2%)	18(51.4%)	
Marketing challenges of grapes	Unreliable markets	Low prices	Delayed payment by processing firms	
	13(37.1%)	7(20.0%)	15(42.9%)	

Source: Field Data June, 2014

Production and Marketing strategies to overcome challenges

Table 12 presents result on production and marketing strategies to overcome challenges faced by smallholder grape producers. Majority of respondents (45.6%) argued that government should employ more extension officers in order to help them to overcome production challenges. Others (31.4%) explained that there should be written contract between producers and the buyers (Processing Firms) and the rest showed the need of establishing grape Board and provision of credit to grape farmers (table 12). On the marketing side, majority of respondents (42.9%) explained that government should invest in processing industries in order to increase market for this crop and

(31.4%) argued that there is a need of having a written contract between buyer and seller of the crop. Twenty percent of respondents emphasized the on establishment of grape cooperative union like in other perennial crops such as cashew nuts and cotton. Liberio (2009) clarified that some of the factors for low agricultural growth are inadequate agro-processing facilities to add value and shelf life to farm produce, weak cooperative unions which fail to organise farmers to form strong farming entity, absence of rural financial institutions to address farmers' credit needs on loan terms and weak research – extension – farmer linkage which reduces spread of new agricultural technologies and information/knowledge from research experts to farmers.

Table 12: Production and Marketing strategies to overcome challenges

Variables	Responses				Total no. of respondent
Production strategies	Government should establish grape board	Government should employ extension officers in order to help them	There should be written Contract between producers and Buyers (processing firm)	Government should provide credit to farmers	35
	4(11.4%)	16(45.8%)	11(31.4%)	4(11.4%)	
Marketing strategies	There should be a contract between buyer and sellers	Government should invest in processing industry in order to increase market for this crop	Department of cooperatives and marketing should assist the producers to establish cooperative union	There should be reliable market	35
	11(31.4%)	15(42.9%)	7(20.0%)	2(5.7%)	

Source: Field Data June, 2014

IV. CONCLUSION

Results from the study revealed that female small holder farmers were more efficient than male grape producers and unmarried smallholders grape producers were more efficient compared to married ones. Also, the youngest producers had the largest grape output compared to elders. Furthermore, results showed that grape production was mostly practiced by people with low education and people with higher education were not

effectively engaged in grape production. On average each smallholder grape producers sold through marketing channel of Producers—Agents---processing firms which account for 91.4% of marketed share. Moreover, majority of respondents replied that they sale their produces on credit basis and it takes more than 6 months to be paid. Major challenges faced in the production and marketing of grape were decline of the quality of grape due to delayed payment, diseases and unreliable market whereby the major production and marketing strategies were to

employ more extension officers, increase the numbers of processing firms, there should be written contracts between buyers and sellers and the government should establish grape cooperative unions.

V. POLICY RECOMMENDATIONS

- i. Government should enforce written contract between buyer and seller of grape in order to reduce some thought of exploitation of sellers and also to ensure market reliability for grapes;
- ii. Government should establish grape board and cooperative union in order to organise farmers to form strong farming entity;
- iii. More research should be conducted to address and solve challenges faced by small grape producers in Dodoma Municipal.

ACKNOWLEDGMENT

Researchers acknowledge to smallholders grape producers in Hombolo wards without them the study would be not be successful. Also Researchers appreciate the marvelous assistants of Hombolo Ward Executive officer (WEO) and Village Executive officer (VEO) who provided their apple time in data collection.

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