



Unlocking the Potentials of Vegetable Production and Marketing of Kumbaney Women Vegetable Producers in Central River Region South of the Gambia

Sanyang SE*

Ministry of Agriculture, Quadrangle Banjul, The Gambia

***Corresponding author:** Saikou E Sanyang, Ministry of Agriculture, Quadrangle Banjul, The Gambia, Tel: +2207691676; Email: saikoue@gmail.com

Research Article

Volume 8 Issue 4

Received Date: October 05, 2023

Published Date: November 07, 2023

DOI: 10.23880/fsnt-16000316

Abstract

The Government entirely depends on agriculture for its socio-economic development of horticulture in which maximum attention to improve on food and nutritional security. The women and youths do participate in vegetable production and marketing as their main source of income in order to improve on their lives and livelihood. The new paradigm of vegetable production is modern market-oriented and commercialize agriculture. The sample and sampling method was non-probability using the purposive sampling method of data collection. A checklist questionnaire developed for the data collection mainly on yield, price and income. The women producers encounter numerous production challenges such as poor quality seeds, inadequate production technologies and access to markets. The objective of the research findings is to evaluate the cost-benefits analysis. The result shows that, out of 2,500 kg of onion, equivalent to 125 bags/20 kg were sold at D500/bag with a total cash income of D62, 500 followed by tomato with an amount of D30, 175 and D21, 850 for cabbage respectively. In conclusion, vegetable production in the rural community of Kumbaney brought immense changes in their lives and livelihood, as they solve most of their domestic engagements at household level. Therefore, recommending to the government to formulate and design bankable horticulture policies and strategies that would have impact on the lives and livelihood of women producers.

Keywords: Production; Marketing; Unlocking potentials; Community; Garden

Introduction

Agricultural production plays a critical role in the socio-economic development of the Gambia contributing immensely to Gross Domestic product (GDP). The food systems of the country have multifaceted approach comprising of crop production, livestock production and vegetable production. Despite the primary role of the agriculture sector in the economy, its performance and share in most key socio-economic indicators in the past decade have not been consistent, and in some years, performance

in production stagnated or even declined. Low private investment, especially in value added, declining international agricultural commodity prices; soaring prices of food commodities and essential production inputs; inadequate domestic policies, institutional support and investment in the sector. The government and partners are given much attention to vegetable production most especially for women and youths for livelihood improvement. The statistical data from Gambia Bureau of Statistics indicated that, horticulture contributes on estimate 5% to GDP. Vegetable production has become the domain of women where women are

providing 50% of labour force and contribute 69.6% to the country's economy. In addition, vegetable production has lots of opportunities and potentials to women producers in terms of securing income, attainment of nutritional diets and poverty reduction in the rural communities of the Gambia. In Kumbaney women, producers are very active in vegetable production as livelihood improvement. The women producers practice the idea of crop diversification as a strategy to increase income and to address the issue of market. Furthermore, another approach has been to stagger production by advancing planting dates, although proven difficult, as women are not usually available to start work on their gardens until the completion of the rice harvest. A spread in production would be achievable by planting a suitable range of early and late cultivars, but this depends heavily on a timely supply of high quality seed. According to Adeyeye, et al. [1], much of the rural sector activity focus on low-input-low-output relationship in subsistence agriculture instead of production for markets. The tangible reasons are inadequate supply of quality seeds, inadequate simple farm tools, access to markets, poor road conditions, unorganized farmer associations, influencing farm-gate prices, property rights and access to land, inadequate training, and business management skills and by extension climate change and other related issues. These constraints have negative impact on price, low yield and income of women vegetable producers in the rural communities of Kumbaney. Therefore, the objective of this research finding is to evaluate the cost-benefits analysis of vegetable production. The main vegetable crops grown are onions, tomatoes, cabbage and peppers, although some of the older gardens also produce fruit crops including bananas and paw-paws. Women groups' base production on community gardens organized and managed.

The most critical environmental factor affecting crop development is the shortage of water, since production was confine to the dry season when plant growth would be sustainable through reliable irrigation. In recent years, there has been a slight resurgence in small-scale vegetable growers who have identified a niche or local demand for a product and often, they are able to command a premium price, as locally grown produce is perceived to be fresher and of higher quality Carmona, et al. [2]. Organic vegetable production is an option for growers seeking a premium price for their produce, and increased recognition of the health benefits of consuming vegetables, represents an opportunity for vegetable producers, whether large scale or small scale [3]. This resulted to women vegetable producers to obtained high yields by adapting good agronomic practices such as right spacing, enriching the soil with manure, mulching, timely weeding, irrigation, and general field hygiene. According to Shrestha, et al. [4]. Vegetable production can assist the women to save their own seeds, feed the family, sells the surplus to earn income and use the money to purchase

household goods and pay school fees for the children. The income stream from vegetables has added a measure of flexibility to the household budget in taken care of domestic or family engagements by women producers. In overall, vegetable production makes a useful contribution to the country's economy and to the health of its inhabitants, and represent an important focus for development in the rural communities of the Gambia. Primarily, producers are skillful in growing horticultural crops but post-harvest handling and management, distribution and marketing activities remain daunting as a result economic growth is retarded.

Materials and Methods

The Kumbaney women vegetable garden is located in Niamina West District of Central River Region- South of The Gambia (Figure 1). The community comprises of different ethnic tribes living within the same geographical location with peaceful co-existence. The data collection process involves how and where data was collected, analyzed and interpreted. The sample and sampling method was non-probability sampling using the purposive method of data collection based on field observation and experience. Simple checklist questionnaires were develop for the data collection focusing mainly on yield, price, income, and the variables were non-parametric and parametric. The data collection process was through interviews and organized focus-group discussion with the women vegetable producers. A statistical tool of SPSS was use for analysis and interpretation of the results from the data collected.

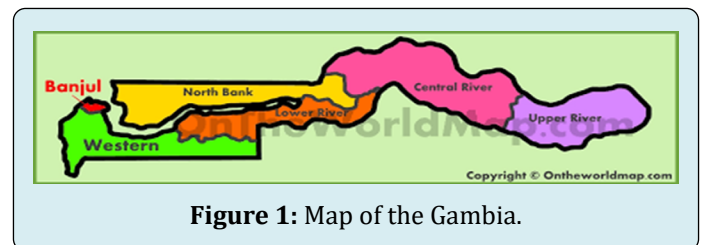


Figure 1: Map of the Gambia.

Results and Discussion

In a meaningful social research finding, three (3) important indicators serve as yardstick to measure performance of input-output relationship. These important indicators are price yield, and income. The result in Table 1, showed the productivity and yield data of Kumbaney women garden for the dry season production. The result shows that, 176 beds of onions was harvested scoring 2,464kg/ha with an average yield of 14kg/bed followed by tomato and cabbage respectively. Crop diversification in vegetable production is important in the sense that producers will have the window of opportunity to fetch double income, access to market, and control of pests and diseases Silva, et al. [5]. Furthermore, crop diversity allows the producers to rely on other crops if

one fails, as this will ascertain the producers to harvest other promising crops. In terms of resource wise it is not important to have verse area of land with minimal out-put rather cultivate small area of land with good management practices and have better yields known as crop intensification [6]. This idea of crop intensification is an appropriate innovative

idea that should be a clear-cut extension message to our productive farmers especially women vegetable producers who are engaged in income generating activities in the rural communities. The vegetable production over the years have contributed immensely to improve on the lives and livelihood improvement of vegetable producers.

Crop	# of beds cultivated (10m ²)	Area cultivate (ha)	Total yield(Kg)	Total yield /ha (Kg)	Average yield (Kg)
Block A (Cabbage)	88	0.44	1,149	1,144	13
Block B (Tomato)	88	0.44	2,140	2,112	24
Block C (Onions)	176	0.88	2,500	2,464	14

Table 1: Production and Yield data.

In the process of vegetable production and marketing, income is a determinant factor to gauge the input-output relationship, as this will show the profitability of the enterprise Yameogo, et al. [7]. In Table 2, the result shows that, out of 2,500 kg of onion, equivalent to 125 bags/20 kg were sold at D500/bag with a total cash income of D62, 500 followed by tomato with a total amount of D30, 175 and D21, 850 for cabbage respectively. In this case, price makes variance in the income status of various crop varieties. Furthermore, onion has more comparative advantage over the rest of other crops because when properly cure to a minimal moisture content in the field, can be stored for several months without spoilage unlike tomato with short

shelf life [8]. Onion is always at high demand locally because of its daily consumption by consumers resulting to better premium price for vegetable producers. In summation, the total income realized from the sales of onion, cabbage and tomato amounts to D114, 525 or US\$ 2,436 obtained from dry season production. Moreover, individual sales had a higher chance of being positive for most farmers if they were involved upstream in the organization of the market Zoundji, et al. [9]. However, climate change is expected to have a significant negative impact on a wide range of economically important on food systems throughout vegetable value chains are susceptible to a range of climate-related issues.

Crop	Quantity (Kg)	# of bags/pan (Kg)	Price	Income earned (Dalasi)	Income earned (US\$)	Gross income (Dalasi/US\$)
Block A (Cabbage)	1,149	46 pan/25	D475	21,850	455	D114,525 (US\$ 2,436)
Block B (Tomato)	2,140	71 pans/30	D425	30,175	642	-
Block C (Onions)	2,500	125 bags/25	D500	62,500	1308	-

Table 2: Production and income data.

The creation of production calendar and market planning is essential to the achievements of production objectives. Planning is a guide as how and when to implement production activities and marketing of fresh produce. The results in Table 3 show projection on production and yield estimation was on assumption or hypothesis. The table below depicts on production, price and income. In Table 3, the year 2021 as the most ideal point for production and income earn

over the years in which D38, 800 was regarded as the most profitable year. However, 2022 and 2023, the production and income level will start plummeting considering the law of diminishing returns which says that, the more input is apply to a fixed asset output will start to decrease at a decreasing rate [10]. This same situation or scenario applied to the two remaining crops of tomato and onions respectively.

Year	Production (tons)	Actual (tons)	Price (25kg/pan)	Income (Dalasi)	Income (US\$)
2019	1.1	1	475	19,000	404
2020	1.9	1.4	475	22,166	471
2021	2.4	2	475	38,800	825
2022	1.9	1.6	475	30,400	646
2023	2	1.5	475	28,500	606

Table 3: Projections for a five (5)-year production and yield for cabbage.

The analysis and the interpretation of the data in Table 4 clearly indicated that, production of tomato would increase over time provided production factors are constant. In the year 2022 with good management practices, actual production can increase up-to 3.0 tons with an income of D42, 500 as a critical point when production and income

will start to decline by the year 2023. In the case of tomato, the more it flowers with lot of branches the more it will bear fruits, which will result to multiple harvest to obtain better yields and income. Farmers with access to more resources often produce and market their crops to earn more and willing to take more production risks Esham, et al. [11].

Year	Production (tons)	Actual (tons)	Price (30kg/pan)	Income (Dalasi)	Income (US\$)
2019	2.1	1	425	14,025	298
2020	2.5	2	425	28,025	596
2021	3	2.5	425	35,275	750
2022	3.5	3	425	42,500	904
2023	2	1.5	425	21,250	452

Table 4: Projections for a five (5)-year production yield data for tomato.

From the analysis of yield data in Table 5, clearly shows that 2019-2020 would be better season than 2021 and 2022 by way of monitoring the production trend and income. The implication of this scenario is that, since onion is a cool season crop and has production cycle of four (4) months. According to Sefer, BK [3] is a pre-requisite for women producers to have proper production calendar targeting the

time of cool season to avoid hot temperatures as this will reduce yields significantly. In comparison, the three (3) crops are of different agronomy and management practices with different times of maturity, where each crop has comparative advantage provided women farmers choose the right crop base on consumers need at a prevailing market price.

Year	Production (tons)	Actual (tons)	Price (20kg/bag) (Dalasi)	Income earned (Dalasi)	Income earned (US\$)
2019	2.5	2.5	500	62,500	1,329
2020	2.5	2	500	50,000	1,063
2021	2	1.5	500	37,500	797
2022	1.5	1	500	25,500	542
2023	1	0.5	500	12,500	265

Table 5: Projections for a five (5) –year yield data for onion.

The result in Table 6, shows the summation of production in-terms of tons and income over the five (5) year period. Primarily, seen in the table where tomato obtained 10 tons while cabbage and onion would score 7.5 tons respectively but primarily onion has comparative advantage over the two (2) vegetable crops in-terms of income followed by tomato and cabbage. Carmona, et al. [2] seasonal fluctuation of

income in rural areas will compel the poor women producers to save money at the peak of income seasons, in order to have enough cash for the months ahead were money scarce called income smoothing. Once agricultural products are ready for market, farmers, traders and other rural entrepreneurs may consider processing them to increase their market value [12,13].

Crop	Projection Year	Actual production (tons)	Income earned	Aggregate income (US\$)
Cabbage	5	7.5	1,38,866	9,784
Tomato	5	10	1,41,075	-
Onion	5	7.5	1,88,000	-

Table 6: Aggregate production and income.

Conclusion and Recommendation

The government of the Gambia, development partners and agricultural projects have given much attention or priority to propel vegetable production and marketing in the rural communities of the Gambia. The women and youths in the communities are contributing immensely to the attainment of food and nutritional security and income to solve family engagements. The Kumbaney women producers over the years practice multiple cropping to meet their basic needs by growing crops that require little capital input. They do have the commitment to take the risk of bad weather and poor prices may destroy their crops, income and food supply. However, women producers echoed production constraints such as poor quality seeds, inadequate knowledge, garden tools and inadequate market outlets as a bottleneck to increase their production capacity and income security. In conclusion, vegetable production in the rural community of Kumbaney brought immense changes in the lives and livelihood as they solve most of their domestic problems at household level. Further revealed that, what they can consume from fresh vegetables, people living in urban centers or cities cannot afford to consume that on daily basis. This research finding recommend to the government to formulate and design bankable horticulture policies and strategies that would have impact on the lives and livelihood of women and youths

Conflict of Interest

This research work does not have any conflict of interest with similar research findings as it is explicit and coherent manuscript.

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