Impact and Challenges of Sweet Potato Production in Vandeikya Local Government Area 1976 - 2020

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ABSTRACT

The paper provides a historical analysis of Sweet Potato production in Vandeikya Local Government Area of Benue State as well as methods, varieties, challenges and potential values of the crop, its impact on the economy. The historical methodology along with multidisciplinary approach was adopted and qualitative data analysis employing primary and secondary sources provided narrative of the social, economic, and environmental factors that have shaped Sweet Potato cultivation and distribution in the area. The study has shown that the use of traditional farming implements is prevalent in the area and this has limited the quality and quantity of yield. The paper also concluded that Sweet Potato is a source of food security and income to many farmers in the area among other impacts. Challenges faced

by producers include pest and disease management, land insufficiency, and lack of access to credit and markets. One of the key contributions of the paper to the body of knowledge is that, it highlights some of the major challenges affecting Sweet Potato production in the area. Recommendations are for collaborative effort by the government, farmers and stakeholders to take measures to address the challenges ensuring maximal impact of the crop on the region.

***Keywords**: Sweet Potato, Production, farmers, Vandeikya LGA.*

Introduction

Sweet Potato (*Ipomoea batatas*) is an important crop in many parts of the world, including Vandeikya Local Government Area (LGA) of Benue State, Nigeria. Sweet Potato is a root vegetable that is rich in carbohydrates, vitamins, and minerals, and has been cultivated for thousands of years.[1] The crop is an important source of food and income for many smallholder farmers in Vandeikya LGA, and has played a significant role in the agricultural sector of the region over the years. Understanding the history of Sweet Potato in Vandeikya LGA is important for policymakers, researchers, and other stakeholders in the agricultural sector to make informed decisions that will improve the production and utilization of this crop in the region.

The paper provides a historical interrogation of Sweet Potato production in Vandeikya LGA from 1976 to 2020. The analysis covers the major events, trends, and factors that have influenced the production and utilization of Sweet Potato in the region over the years. The paper examines the historical context of Sweet Potato production in Vandeikya LGA, including the origins and evolution of Sweet Potato cultivation in the region, the major challenges faced by farmers, traditional and modern methods of producing Sweet Potato, among others.

The history of Sweet Potato production in Vandeikya LGA is closely linked to the history of agriculture in the region. Agriculture is the mainstay of the economy of Vandeikya LGA, and Sweet Potato is one of the most important crops grown in the region. The crop is mainly cultivated by smallholder farmers who use traditional farming methods and tools.[2] The production of Sweet Potato in Vandeikya LGA like in any other part of Nigeria has been influenced by various factors, including climate, soil fertility, pests and diseases, and market demand.[3] Over the years, farmers in the region have faced numerous challenges in the production of Sweet Potato, including low yields, poor quality, post-harvest losses, and lack of access to credit and markets.[4]

Despite these challenges, Sweet Potato production in Vandeikya LGA has continued to play a significant role in the agricultural sector of the region. The crop is an important source of food and income for many smallholder farmers[5], and has contributed to the food security and livelihoods of the people of Vandeikya LGA. Over the years, various efforts have been made by government and other stakeholders to improve Sweet Potato production in the region, including the promotion of modern farming techniques, the introduction of improved varieties, and the provision of extension services and credit facilities.[6] Understanding the history of Sweet Potato production in Vandeikya LGA is important for identifying the challenges and opportunities for the future development of the crop in the region. Achieving this goal therefore is the primary focus in this paper.

The paper is divided into sections; the first defines key concepts in the work, the second highlights varieties of Sweet Potato produced in Vandeikya LGA, the third section examines the methods of production in the region and the fourth focuses on the impact and challenges of Sweet Potato production in Vandeikya LGA, while the fifth section highlights some of the potential values of Sweet Potato and section six concludes the discussion and

recommends possible measures for addressing some of the challenges of Sweet Potato production raised in the paper.

Conceptual clarification

The key concepts that need clarification in this paper are Sweet Potato and production. First and foremost, Sweet Potato, also known as *Ipomoea batatas,* is a root vegetable and one of the most important food crops in the world. It is a dicotyledonous plant in the *Convolvulaceae* family and is native to the tropical regions of South America. Sweet Potato is an excellent source of carbohydrates, dietary fibre, vitamins, and minerals. It is also rich in antioxidants, particularly beta-carotene, which the body converts to vitamin A. Sweet Potato is widely cultivated in Africa, Asia, Latin America, and the Pacific, with China being the largest producer, followed by Uganda, Nigeria, and Tanzania.[7]

There are two main types of Sweet Potato: the orange-fleshed Sweet Potato and the white-fleshed Sweet Potato. The orange-fleshed Sweet Potato is rich in beta-carotene and has been promoted as a biofortified crop to address vitamin A deficiency, particularly in sub-Saharan Africa. The white-fleshed Sweet Potato, on the other hand, is more popular in Asia and the Pacific and is used in a variety of dishes, including desserts, noodles, and bread. Sweet Potato is propagated through vines, cuttings, and seeds, and requires a well-drained soil, warm temperatures, and adequate water and nutrients.[8]

Sweet Potato is a versatile crop with numerous uses. It can be boiled, baked, fried, mashed, or roasted and can be used as a substitute for potatoes in many recipes. Sweet Potato can also be processed into flour, chips, noodles, and other value-added products. Additionally, Sweet Potato leaves are edible and are consumed as a vegetable in some cultures. The crop is also used as animal feed and as a raw material for starch, alcohol, and biofuel production.[9]

Production on the other hand simply means "the process of combining various material inputs and immaterial inputs (plans, know-how) in order to make something for consumption (output).[10] According to Bates and Parkinson, "Production is the organised activity of transforming resources into finished products in the form of goods and services; the objective of production is to satisfy the demand for such transformed resources".[11] According to J. R. Hicks, "Production is any activity directed to the satisfaction of other peoples' wants through exchange".[12] This definition makes it clear that, in economics, we do not treat the mere making of things as production. What is made must be designed to satisfy wants. Considering production of Sweet Potato, the crop is on increase demand during the recent decades. This hike in demand led to commercial quantity of production of Sweet Potatoes in the area of study.

Varieties of Sweet Potato Produced in Vandeikya L.G.A.

The cultivation of Sweet Potato has been an integral part of the agricultural landscape in Vandeikya Local Government Area of Benue State for many decades. Over the years, several varieties of Sweet Potato have been produced in the area, each with its unique characteristics and properties. This section seeks to explore the varieties of Sweet Potato produced in Vandeikya Local Government Area between 1976 and 2020.

According to the Benue State Agricultural and Rural Development Authority (BNARDA), several varieties of Sweet Potato have been produced in the area over the years. One of the most popular varieties is the Beauregard variety, which is known for its high yield and excellent taste. Other varieties that have been produced in the area include the Georgia Jet, Jewel, and Covington varieties, all of which are highly nutritious and adaptable to the local soil and climatic conditions.[13] Similarly, a farmer notes that, different varieties of Sweet Potato were produced in

Vandeikya Local Government Area; some of the local names given to these varieties include; *Nyianyia* which was also regarded by other farmers as *Aondo wa mkurem.* According to the informant, this variety of Sweet Potato was usually yellowish inside and sweet.[14]

Another informant provided a list of other varieties of Sweet Potato produced in Vandeikya comprised of Shagari, Buhari and BNARDA She further differentiated them by describing their colours. According to her, Buhari as a variety of Sweet Potato was introduced to the area during General Muhammadu Buhari's regime. The tubers of this variety of Sweet Potato had red covers; however, it was white inside when peeled. The informant also mentioned that, BNARDA as a variety of Sweet Potato was introduced to the area by the Benue State Agricultural and Rural Development Authority (BNARDA) about 5 years ago. This variety is reported to have yielded more than the previous varieties mentioned above, and it was both white outside and inside.[15] More so, P. Adega mentioned other varieties of Sweet Potato produced in the area like Aondo *wa mkulem, Ashir dugh,* BNARDA, among others.[16]

Also, it is pertinent to note that, the production of Sweet Potato in Vandeikya Local Government Area has been boosted by the efforts of agricultural development organizations such as the International Institute of Tropical Agriculture (IITA). The IITA has been working with BNARDA to promote the cultivation of Sweet Potato in the area, and this has resulted in the introduction of new varieties of Sweet Potato that are better adapted to the local conditions.[17] Therefore, the production of Sweet Potato in Vandeikya Local Government Area has increased significantly over the years, thanks to the introduction of new varieties of the crop. According to BNARDA, in the area under review, Sweet Potato cultivation has increased from 1,500 hectares in 2010 to 3,000 hectares in 2020.[18] This increase in production has resulted in a

corresponding increase in the yield of the crop, which has helped to boost the economic development of the area.

However, these varieties were also infested by pests or other factors.[19] One of the significant challenges facing the production of Sweet Potato in Vandeikya Local Government Area is the prevalence of pests and diseases that affect the crop. According to the IITA, Sweet Potato weevils and viruses are some of the most common pests and diseases that affect Sweet Potato production in the area. However, the IITA has been working with local farmers to develop strategies to control these pests and diseases, including the use of resistant varieties of Sweet Potato.[20]

Therefore, the cultivation of Sweet Potato in Vandeikya Local Government Area has a long history, and several varieties of the crop have been produced in the area over the years.[21] The introduction of new varieties of Sweet Potato by agricultural development organizations such as the IITA has helped to improve the yield and quality of the crop, thereby contributing to the economic development of the area. However, pest and disease control remain a significant challenge for Sweet Potato production in the area.

The Processes and Techniques involved in Producing Sweet Potato in Vandeikya L.G.A from 1976-2020

This section examines the processes and techniques used in producing Sweet Potato in Vandeikya LGA from 1976 to 2020. Sweet Potato production in Vandeikya LGA involved several steps, including land preparation, planting, weeding, harvesting, and processing. Land preparation involves clearing and tilling the soil to create a suitable environment for planting. Farmers typically used traditional methods such as hoe and cutlass to prepare the land.[22]

Planting of Sweet Potato was done either by direct seeding or using vine cuttings as noted by one of the informants, Terlumun Waiko.[23] He further states that,

weeding was essential to prevent competition for nutrients and water, which could negatively impact yield. Harvesting was typically done after 4-6 months, and the potatoes were either sold fresh or processed into chips, flour, or other products according to Mary Igbakula.[24]

Over the years, there have been several technological advancements in Sweet Potato production generally. For instance, the use of improved varieties has increased yield and reduced crop loss due to pests and diseases. Additionally, the introduction of mechanized farming equipment, such as tractors and Plows, has made land preparation easier and more efficient. The use of fertilizers and other agrochemicals has also helped to improve yield.[25] However, despite these technological advancements, Sweet Potato production in Vandeikya LGA faces several challenges. One of the most significant challenges is the lack of access to modern farming equipment and technology, which limits productivity and efficiency. The region also faces issues with inadequate irrigation systems, limited access to credit, and poor storage facilities, which can lead to post-harvest losses.[26]

To address some of these challenges, the government and other stakeholders have implemented various programmes and initiatives to support Sweet Potato production in Vandeikya LGA. For instance, the government has provided subsidies on inputs such as fertilizers and improved seedlings. Agricultural extension services have also been introduced to provide farmers with information on modern farming techniques and technologies. Additionally, there have been efforts to promote Sweet Potato processing and value addition, which can increase income and reduce post-harvest losses.[27] In addition, Sweet Potato production in Vandeikya LGA has undergone several changes and improvements over the years. While there have been technological advancements and government interventions, the region still faces significant challenges that need to be addressed to improve productivity and

efficiency which further researchers could explore the potential of precision agriculture, including the use of drones and sensors, to increase yield and reduce production costs.

Impact and Challenges of Sweet Potato Production in Vandeikya L.G.A.

This section is bi-dimensional. It has two sub-sections; the first discusses the impact of Sweet Potato cultivation in the study area during the period under review. The second sub-section examines the challenges farmers faced in the process of cultivating Sweet Potato in Vandeikya LGA.

Impact of Sweet Potato Cultivation

Sweet Potato production has been a significant economic activity in Vandeikya Local Government Area (LGA) for many years, with a wide range of impacts on the local community. One of the most significant impacts of Sweet Potato production in Vandeikya LGA is on the local economy. Sweet Potato farming provided a source of income for many households, created jobs and stimulated economic growth in the region. The crop also served as an essential source of food for the local population, provided a cheap and nutritious staple that was widely consumed.[28]

The impact of Sweet Potato production on food security cannot be overstated. Sweet Potatoes were a rich source of carbohydrates, vitamins, and minerals, and their production helped to improve the nutritional status of the local population. Moreover, the crop was resistant to drought and could grow well in poor soil, making it an ideal food security crop for the region.[29]

In addition to its impact on food security, Sweet Potato production has had significant environmental benefits. The crop is a good soil conserving crop, and its cultivation helped to prevent soil erosion, reduced carbon emissions, and increased soil fertility. This made Sweet

Potato production a sustainable farming practice that promotes ecosystem health and resilience.[30]

Sweet Potato production has also had a positive impact on gender equality in the region. Women play a crucial role in Sweet Potato farming, from land preparation to harvesting and processing. By providing women with access to land, training, and inputs, Sweet Potato production has helped to empower women and promote gender equality in the region.[31] Based on the above analysis therefore, it is glaring that, Sweet Potato production has had a significant impact on the local economy, food security, environmental sustainability, and gender equality in Vandeikya LGA. However, there are still challenges that need to be addressed to improve productivity and efficiency.

Challenges of Sweet Potato Production in Vandeikya LGA

Sweet Potato production has faced several challenges in Vandeikya Local Government Area (LGA), hindering its full potential. One of the most significant challenges of Sweet Potato production in Vandeikya LGA is the lack of access to modern farming equipment and technology. Most farmers rely on traditional farming methods, limiting productivity and efficiency. The use of modern technologies such as precision agriculture, irrigation, and mechanization could significantly improve yield and profitability.[32]

Limited access to credit is another significant challenge facing Sweet Potato production in Vandeikya LGA. Farmers struggle to access credit facilities to finance their farming operation, which hindered their ability to invest in inputs and technology. This limited the scope and scale of their production and led to a vicious cycle of low productivity and poor incomes over the years.[33]

Another challenge is poor soil fertility due to long-term cultivation without adequate soil conservation measures. This led to poor yields, low quality produce, and

increased susceptibility to pests and diseases.[34] Farmers need to implement soil conservation measures, such as crop rotation, intercropping, and the use of organic fertilizers to maintain soil fertility and improve crop yields. Post-harvest losses due to poor storage facilities and inadequate processing technologies are also major challenges facing Sweet Potato production in Vandeikya LGA. Lack of proper storage facilities led to spoilage, and farmers were forced to sell their produce at lower prices to avoid losses. Moreover, limited processing technologies led to limited value addition and resulted in low returns for farmers.[35]

Pests and diseases were also a significant challenge for Sweet Potato production in Vandeikya LGA. The region was prone to pests such as Sweet Potato weevils, which caused significant damage to crops, reduced yields and quality. Diseases such as Sweet Potato virus also caused significant losses, leading to lower yields and economic returns as observed by an informant, Terlumun Waikyo.[36]

Another factor is climate change and variability which posed additional challenges to Sweet Potato production in Vandeikya LGA. Erratic rainfall patterns, increased temperatures, and prolonged dry spells can affect crop growth, yield, and quality.[37] Farmers need to implement climate-smart agricultural practices, such as agroforestry, crop diversification, and water harvesting, to mitigate the effects of climate change and variability in the region.

Limited access to extension services is another significant challenge facing Sweet Potato production in Vandeikya LGA. Extension services provide farmers with information on modern farming techniques, crop management, and pest and disease control. These services are not available neither accessible by farmers in the area. Lack of extension services hinders farmers' ability to access information on the latest farming technologies and practices, limiting their productivity and profitability.[38]

Inadequate market access is yet another challenge facing Sweet Potato production in Vandeikya LGA. Farmers struggled to access markets, leading to poor returns on investment. Limited transport infrastructure and poor communication channels contributed to market access challenges, making it difficult for farmers to reach distant markets and buyers. This is more pronounced in interior places where access roads were either not available or in bad state.[39]

Similarly, land tenure issues and conflicts also posed challenges to Sweet Potato production in Vandeikya LGA. Inter-communal land conflicts between farmers led to loss of crops, livestock, and human lives. Moreover, land use changes and competing land uses, such as urbanization and mining, led to the loss of arable land, reducing the available land for Sweet Potato production in Vandeikya LGA.[40] Arising from the above therefore, it is obvious that, Sweet Potato production in Vandeikya LGA faced several challenges, including limited access to modern farming equipment and technology, inadequate credit, poor soil fertility, post-harvest losses, pests and diseases, climate change and variability, limited access to extension services, inadequate market access, and land tenure issues and conflicts.

Conclusion

The history of Sweet Potato production in Vandeikya LGA from 1976 to 2020 has been a complex and multifaceted one. The initial adoption of Sweet Potato cultivation as a coping mechanism for economic and food security challenges was followed by the emergence of modern cultivation techniques, which enabled farmers to increase their yields and minimize losses. However, despite these advancements, Sweet Potato production in Vandeikya LGA is still beset by a number of challenges, including limited access to credit and agricultural inputs, insufficient knowledge and skills of farmers in modern cultivation and preservation techniques, and inadequate

storage and marketing infrastructure. These challenges require urgent attention from policymakers and development practitioners to ensure that Sweet Potato farmers in Vandeikya LGA are able to fully realize the potential benefits of this crop.

To address the challenges raised in this paper, the following recommendations have been made:

i. There should be collaborative efforts between farmers, government, non-governmental organizations, and other stakeholders in the agricultural sector to address the challenges facing Sweet Potato production in Vandeikya LGA.
ii. Improving access to credit, modern farming equipment and technology, extension services, and markets could significantly improve Sweet Potato production in Vandeikya LGA.
iii. Additionally, implementation of soil conservation measures, climate-smart agricultural practices, and pest and disease control strategies could improve soil fertility, mitigate the effects of climate change and variability, and reduce losses due to pests and diseases.
iv. Moreover, improving land tenure security and resolving land use conflicts could provide a more conducive environment for Sweet Potato production in Vandeikya LGA.

Endnotes

1. FAO. "Sweet Potato", in *Food and Agriculture Organization of the United Nations*, 2021. Retrieved from http://www.fao.org/sweet-potato/en/, accessed on 12th January, 2023.
2. Oral interview, Tarfa Kpande, 56years, farmer, Gbem, 21st March, 2023
3. F. O. Ogbe, & B. A. Aighewi, "Sweet Potato in Nigeria: Production, processing, and utilization", in

Sweet Potato in Subtropics, Vol. 4, 2018, Pp.173-197.

4. Oral interview, Deun Ihom, 73 years, farmer, Gbekeke-Mbagbera, 15th February, 2023.
5. F. O. Ogbe, & B. A. Aighewi, "Sweet Potato in Nigeria: Production, processing, and utilization" …P. 184.
6. F. O. Ogbe, & B. A. Aighewi, "Sweet Potato in Nigeria: Production, processing, and utilization" …P. 195.
7. FAO. "Sweet Potato", in *Food and Agriculture Organization of the United Nations*, 2021…
8. F. O. Ogbe, & B. A. Aighewi, "Sweet Potato in Nigeria: Production, processing, and utilization" …P. 173.
9. F. O. Ogbe, & B. A. Aighewi, "Sweet Potato in Nigeria: Production, processing, and utilization" …P. 178.
10. J. Adugna, et al. "Assessing the Efficiency of Sweet Potato Producers in the Southern Region of Ethiopia", in *EXPL Agric,* Vol. 54, 2018, Pp. 491–506.
11. Internet, https://en.wikipedia.org › wiki › Production_(economics), assessed on 12th January, 2022.
12. Internet, https://www.economicsdiscussion.net/production/production-meaning-definition-types-and-factors/12398, accessed on 13th January, 2022.
13. Benue State Agricultural and Rural Development Authority. "Sweet Potato Production in Benue State", …
14. Oral interview, Isaac Shawon, 35years, farmer, Ningev, 22nd May, 2023.
15. Oral interview, Deun Ihom, 72years, farmer, Mbatswam, 24th May, 2023.
16. Oral interview, Philip Adega, 49years, Lecturer, Makurdi, 8th May, 2023.

17. International Institute of Tropical Agriculture, "IITA and Partners Introduce Sweet Potato to Nigerian Farmers to Improve Food Security and Income, 2019…
18. Benue State Agricultural and Rural Development Authority. "Sweet Potato Production in Benue State", …
19. I. Kanu, J.T. Amodu, & J.A. Akinwumi, "Performance of Selected Sweet Potato Varieties in two Ecological Zones of Benue State, Nigeria", in *Journal of Agricultural Science*, Vol.7, No. 6, 2015, 53-61.
20. International Institute of Tropical Agriculture, "IITA and Partners Introduce Sweet Potato to Nigerian Farmers to Improve Food Security and Income, 2019…
21. E.C. Nwachukwu, & K.I. Ugwuoke, "Sweet Potato Varieties: A Review of their Agronomic Characteristics and Potential for Food and Industrial Applications", in *Food and Energy Security,* Vol. 8, No.3, 2019.
22. IITA, "Sweet Potato Production and Processing Technologies in Nigeria", 2019. Retrieved from https://www.iita.org/wp-content/uploads/2019/09/Sweet-potato-production-and-processing-technologies-in-Nigeria.pdf, accessed on 16th February, 2023
23. Oral interview, Terlumun Waikyo, 48years, farmer, Agbo Market, 24th January, 2023.
24. Oral interview, Mary Igbakula, 43years, farmer Agu Market, 17th February, 2023.
25. NBS, "Agricultural Performance Report Q3 2020", Retrieved from https://nigerianstat.gov.ng/download/1053, accessed on 23rd January, 2023.
26. FAOSTAT, "FAO Statistics Division 2021". Retrieved from

http://www.fao.org/faostat/en/#data/QC, accessed on 23rd January, 2023.
27. ILO. "Agricultural Employment Trends in Nigeria, 2015". Retrieved from https://www.ilo.org/wcmsp5/groups/public/---africa/---ro addis_ababa/documents/publication/wcms_378136.pdf, accessed 15th March, 2023.
28. G. M. Gberikon, & V. T. Gever, "The Impact of Sweet Potato on Agricultural Development in Vandeikya Local Government Area of Benue State, Nigeria…P. 95
29. S. L. Aondoakaa, E. T. Ikyaagba, & T. P. Terna, "Food Security and Poverty Reduction through Agricultural Development in Vandeikya Local Government Area of Benue State, Nigeria", …P.87.
30. B. C. Oyiga, F. A. Adesina, G. Olaoye, & P. A. Okuneye, "Effect of Sweet Potato Planting Density and Fertilization on yield and Quality of Storage Roots in South Western Nigeria", in *Journal of Agriculture and Environmental Sciences,* Vol. 16, No.1, 2017, Pp.10-19.
31. I. Kanu, J.T. Amodu, & J.A. Akinwumi, "Performance of Selected Sweet Potato Varieties in two Ecological Zones of Benue State, Nigeria…P.56.
32. G. M. Gberikon, & V. T. Gever, "The Impact of Sweet Potato on Agricultural Development in Vandeikya Local Government Area of Benue State, Nigeria…P. 97
33. Oral interview, Veronica Chiahemba, 52years, farmer/businesswoman, Mbaakon, 15th February, 2023.
34. I. Kanu, J.T. Amodu, & J.A. Akinwumi, "Performance of Selected Sweet Potato Varieties in two Ecological Zones of Benue State, Nigeria…P.58.
35. Oral interview, Veronica Chiahemba…15th February, 2023.

36. Oral interview, Terlumun Waikyo… 24th January, 2023.
37. F. O. Ogbe, & B. A. Aighewi, "Sweet Potato in Nigeria: Production, Processing, and Utilization", in *Sweet Potato in Subtropics*, Vol.4, 2018, Pp.173-197.
38. IFPRI, "Nigeria. International Food Policy Research Institute, 2019". Retrieved from https://www.ifpri.org/country/nigeria, accessed on 19th February, 2023.
39. Oral interview, Deun Ihom,15th February, 2023.
40. Oral interview, Gbamwuan Shimasaan, 11th January, 2023.