



## Market Gardening \_A Conceptual Review

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**ABSTRACT:** The article reviews research into market gardening farming system. It considers, first what the concept of market gardening mean, its existing terminologies across the globe. It discusses concept evolution, subsequent intensification, diversification with main emphasis on commercialized vegetables. Lastly, the paper reflects advantages in the context of profitability of this enterprise and suggests some possible directions for future research.

**KEYWORDS:** market gardening, terminology, vegetables, marketing, farming

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### I. INTRODUCTION

The concept of market gardening is based on the efficient use of small pieces of agricultural land (approx. 0,1 to 3 hectares) by means of hand labour and simple mechanized tools – with the aim of generating high profits through selling a large variety of high-quality vegetables (but also herbs and fruits) directly to customers (Grand Garten, 2020). Market gardening can be seen as a subset of commercial horticulture, which is itself a subset of the broader agricultural industry and is defined as the science and art of cultivating, processing and marketing of fruits, vegetables, nuts and ornamental plants on a scale larger than a home garden(Ojeifor et al., 2006, Bachmann, 2009, Adebisi ,et al., 2010 Ahouangninou, C et al ., 2013, Boileau, 2014). An important part of the commercial production of fresh products takes place in peri-urban areas, which have a comparative advantage in terms of market and distance (Egal et al.,2003) According to Ahouangninou, C et al.,2013 market gardening is an important branch of urban and peri urban agriculture. Basically, grown for fulfilment of urban demand and the cropping pattern depends on the local market demand. According to (Aslam et al., 2019) vegetable production is concentrated in peri-urban areas as related to the rural production areas because of increasing people preference towards the ingestion of fresh vegetables and nutritious diet, mostly perishable production like vegetables and ornamentals which are grown in peri- urban areas. This study has also inferred that peri urban areas had high market orientation where producers can sell at higher market prices. Market gardening is oriented towards local markets, although production for shipping to more distant market is possible (Bachman,2009). Market gardens are small farm operations that are usually located within proximity to the urban community but can also service markets farther away if transportation and distribution system exist(Catherine, 2017). One the characteristics of this farming is that the marketing of the vegetables is extended over as long period as possible in which a pattern has been formed where generally frequent, regular trips to the market has been seen, costs of such a procedure become prohibitive as distance from market increases (Derek,1966).

Market gardening fills a strange niche in the agricultural sector. Many authors have referred to it as the "Cinderella industry."(Thick,1998) generally termed market gardening in Europe, Australia, New Zealand or truck Farming in North America (Boileau, 2014) and Boston's in Istanbul (Kaldjian, 2004). This type of vegetable production is often found at the fringe of urban areas(Derek., 1966). The rationale of this location was first expounded by Johan Heinrich von Thunen 1875(Derek., 1966).Evolving from subsistence farming, the practice of market gardening has been around for centuries and overtime has become an important aspect of agriculture (Wong, 2005, Angwafo T.S, 2020). Anthropologist Helen Leach has observed vegetable farming / gardening, or kitchen gardening as it is also termed, is perhaps the most widespread form of gardening in the world, as seen practised by all but a few traditional hunter gatherer societies. It is an activity as ancient as sowing grains or raising livestock. The terms market gardener and market garden do not seem to have been used before the 19<sup>th</sup> centuries and were not in general use until after 1850 or 60 (F.Beavington,1965).Community gardens were initiated around the eighteenth and nineteenth centuries where tropical vegetable culture survived in remote areas (Griggs,1974). The spread of market gardening around London has been documented from the early 1600s as the rapidly growing

population of the city placed huge demands on the surrounding countryside to produce food (Thick,1998). In the 16<sup>th</sup> and 17<sup>th</sup> centuries, Huguenots, refugees from France, holland and Belgium, set up commercial market gardens all over southern England and particularly around the expanding city of London (Stapleton,1987) Historians of the gold rushes in Australia have noted the gardening activities of Chinese miner's farm as early as 1865 (Boileau,2014). According to (News, 2003), at the beginning of the 20<sup>th</sup> century farmers began cultivating exotic vegetables in Sudano-Sahel region. These irrigated vegetables have become very important agricultural activity in and around towns and cities. The farmers use hand labour to grow vegetables on very small plots (100-500m<sup>2</sup>) to sell to urban consumers. These plots are often referred to as "market gardens".

Khan et al.,2020 had pointed that vegetable cultivation under market gardening is an important component of value-added cropping system of Indian agriculture. (Nengroo et al., 2017) in his work has classified the commercial gardening farms as vegetable gardens which has significant increase in their expansion in terms of the area from mere 0.34 km in 1971 to 9.79km in 2017 in the rural urban fringe of the Srinagar city.

## **II. MARKET GARDENING FOR VEGETABLES**

According to (Blaut, J.M,1958) high demand by Singapore's Chinese population for Chinese vegetables and distance of most competing farms from Singapore markets, are important factors in the cultural setting favouring the islands leaf stem vegetable farms. It is distinguished from more specialised branches of horticulture such as orchards and vineyard by the wide variety of crops cultivated including vegetables herbs and sometimes fruit and flowers (R. Sakiyama,1991). Crops are produced largely by small holder farmers and marketed through informal channels (Poole et al., 2002). It applies a bio-intensive method, meaning a high-intensity, high rotation and broad range of crops. The aim is to produce continuously from as early as possible in Spring to as late as possible in Autumn and it has a focus on the environment, farmers' well-being and income(eip-agri,2020) (Marshall & Randhawa, 2017) have observed that the empirical data that is available does demonstrate that a high proportion of the fresh perishable produce is grown in peri- urban areas adjacent to the urban core. Vegetable production in urban and peri urban environments is also important and attractive, especially for highly perishable and delicate products such as vegetables. The overwhelming expansion of this sector in peri urban areas is mainly due to its fast income deriving potentials, compared to a number of other agricultural products cultivated on annual or biennial basis. this activity is mainly adopted by urban poor (Abdulai et al., 2017)

## **III. VEGETABLE PRODUCTION IN MARKET GARDENING**

Market gardens are typically 5 to 20 acres in size and grow a variety of vegetable crops for market (W. Ferguson,1948). The relative profitability of vegetable crops compared to cereals has been shown to be a determining factor for crop diversification into vegetable production in India (Joshi et al., 2003) According to (Singh et al., 2010) commercial vegetable cultivation is not getting popular as it should be among growers because of high input costs, lack of irrigation facilities and difficulties in marketing and storage and growing of vegetables is 4 to 8 times more remunerative than cereals and also generates employment in the rural areas. According to (Abdoulaye et al.,2015) market gardening products present a number of comparative advantages in relation to other agricultural products in the context of farming in the urban zone., a big diversity of species and varieties., a potential of yield per time unit and per very high soil unit, a rapid growth a high intensity of manpower a high merchant value and nutritious qualities and health and per capita market gardening channel contributes up to 1.3 kcal and 8.1g of proteins. According to (Abdulai et al., 2017) vegetable production and marketing, amongst other peri-urban agricultural activities continue to play a significant role in the supply of urban foods. The acreage productivity of vegetables cultivated has been estimated as 24. 1t/ha which is about a yield of 20000 tons per year and in normal year vegetables are sold for a value between 300-400 crores (J. Casimir,2017). Because vegetables are high-value cash crops and require more inputs (particularly labour and chemicals) than cereals or other staple crops (Mariyono, 2018), vegetable cultivation contributes to better income and employment, as well as to nutritional benefits of small holder farmers, rural laborers, and consumers.

## **IV. MAIN TYPES OF THIS FARMING**

Several systems of production exist in market gardening. the two main systems are conventional production systems (using pesticides and chemical fertilizers) and the biological production system. the conventional system is more widespread in growing. Production is done on small size farms in large cities or in their suburbs (Martin, 1985) According (Berg L.D,2002) urban agriculture is not just on entity: it ranges from production in buildings to that in the open air, from rooftops to collars, from subsidiary gardens for household consumption to small- and large-scale market gardening. thus, in terms of size of farm population density, and yield rate farming in the plain is highly intensive. Market gardening is less susceptible to changing environmental condition than other aspects of the agricultural industry such as orchards (Catherine,2017)

## V. ADVANTAGES OF MARKET GARDENING COMPARED TO OTHER FARMING SYSTEMS

The science of vegetable cultivation is termed as olericulture. Vegetable is an addible, usually a succulent plant or a portion of it eaten with staples as main course or as supplementary food in cooked or raw form. Vegetables cultivated for sale in market may give a net return of 1.0-1.25 lakhs/ha which is 4-5 times more than cereals (Science, n.d.). Market gardening has a vital and multifaceted role in providing food security, meeting the demands of consumer markets, utilizing labour and generating income. The related income can also facilitate access to other types of food and vital resources and in view of the urban population growth that leads to a strong demand for market garden products, market gardening sector constitutes an important source of jobs and food (Serge.S, et al,2020) Important considerations are choice of vegetables adapted to soil amid climatic conditions, facilities of labour, water for irrigation and transport, proximity to market, and preferences of market consumers. Intercropping, succession of crops, relay cropping, mixed cropping and early maturing cultivars for continuous supply and for obtaining high price by bringing early produce in the market.(Science, n.d.)

From the literary source it is now clear that a shift has occurred towards commercial horticulture. Analysis of the economic feasibility of this shift away from cereals to fruits and vegetables shows that it's an economically viable and beneficial to shift towards horticulture production , but this diversification needs to be planned in a systematic manner (Mittal,S, 2007).Since vegetable producers are usually better integrated into markets than the cereal crop producers, the production of vegetables crops contribute to commercialization of the entire rural economy , which is characterised by increased marketing and trade (Silva Dias, 2011).At the aggregate level, access to land and water can play a critical role in reducing urban poverty and improving food and nutritional security through urban and peri-urban agriculture, especially gardening of fruits, flowers and vegetables (Sahasranaman.M,2016). Horticulture industry has emerged as an important sector for diversification of agriculture and has established its credibility in improving farm income through increased productivity, generating employment and in enhancing exports besides providing household nutritional security (Sugam, 2017). In Benin, as in all other sub-Saharan African countries, market gardening plays an important role in socio-economic activities and contributes quantitatively and qualitatively to improving food and nutritional situation of rural and urban populations by bringing minerals elements and vitamins (Houngla et al., 2019)

## VI. CONCLUSION

It is undeniable that geographic locations, various extensions services, experience knowledge are one of the most important factors determining the success of this enterprise. From the above literature, it can be inferred that the very location of market gardens exists in no man's land. The location can be far of depending upon the locational, transportation aspects. Areal quantification at different time periods, locational characteristics, production trends and the subsequent post-harvest management of the produce besides supply and consumption, availability scenarios of the producing and receiving areas of the produce (Vegetables) respectively are of the emerging dimensions of this enterprise. From the areal quantification, clusters specializing in this enterprise can be delineated. Interpretation of the all the aspects of this farming in the clusters specializing in this farming will give an insight about the future scenarios of this industry in terms of declining or growing status of market gardening in an area of research.

## REFERENCES

- [1]. Abdoul-Ramane Abdoulaye, A. Y. (2015). Urban Market\_ Gardening in Parakou (Republic of Benin): Spatial Dynamics , Food Security, Protection of the Environment and creation of Employments. *Journal of Geoscience and Environment Protection*, 3(5), 93-103. doi:10.4236/gep.2015.35011
- [2]. Abdulai, J., Nimoh, F., Darko-Koomson, S., & Kassoh, K. F. S. (2017). Performance of Vegetable Production and Marketing in Peri-Urban Kumasi, Ghana. *Journal of Agricultural Science*, 9(3), 202. <https://doi.org/10.5539/jas.v9n3p202>
- [3]. Adelan O Adebisi, I. A. (2010). Gender Analysis of production ,potentials and constraints of *Thaumatococcus danielli* in Ekiti State . *J. Agriculture Science* , 54-59.
- [4]. Ahouangninou, C. ...B. (2013). CHARACTERIZATION AND DIVERSITY OF THE MARKET-GARDENING PRODUCTION SYSTEMS . *Sustainable Development*, 24-38.
- [5]. Angrie, T. E. (2020). Market Gardening and Poverty Reduction in Jakiri Subdivision NorthWest Region Cameron. *Journal of Agriculture and Crops*, 6(4), 32-57. doi:doi.org/10.32861/jac.64.32.57
- [6]. Aslam, M., Ayub, M. A., Yasin, M., Atta, B., & Kaku, K. S. (2019). Dynamics of Marketed Surplus of Major Vegetables in Multan , Pakistan. 4(June), 23-34.
- [7]. Bachmann, J. (2009). Market gardening: A Start Up Guide. ATTRA\_ National Sustainable Agriculture Information Service. Retrieved from [www.attra.ncat.org](http://www.attra.ncat.org)
- [8]. Berg, L. d. (2002). Urban agriculture etween Allotment and Market gardening: contributions to the sustainability of Africa and Asian cities. *The Sustainable City II*.
- [9]. Blaut, J. M. (1958). Chinese Market Gardening in Singapore :a study in Functional Microgeography. Louisiana State University. Retrieved from [https://digitalcommons.lsu.edu/gradschool\\_disstheses/481](https://digitalcommons.lsu.edu/gradschool_disstheses/481)
- [10]. Boileau, J. (2014). Chinese Market Gardening in Australia and New Zealand, 1860s - 1960s: A Study in Technology Transfer . 71(271), 1-424.
- [11]. D.B.Grigg. (1974). *The Agricultural systems of the world : An Evolutionary approach*. Cambridge University press,New York.
- [12]. F.Beavington. (1965, December). Early Market Gardening in Bedfordshire. *Transactions of the Institute of British Geographers*, 37,

- 91-100. Retrieved from <https://www.jstor.org/stable/621692>
- [13]. Florence Egal, A. V. (2003, April). Urban Agriculture, Household Food Security and Nutrition in Southern Africa. Plant Production and Protection Division (AGP) of FAO, Rome .
- [14]. Geography, S. E., Jan, N., & Smith, D. L. (1966). Market Gardening at Adelaide ' s Urban Fringe Author ( s ): Derek L . Smith REFERENCES Linked references are available on JSTOR for this article : reference # references \_ tab \_ contents You may need to log in to JSTOR to access the linked references . I . 42(1), 19–36.
- [15]. GRAND GARTEN. (2020). Market Gardening: A successful tradition revitalized Background. 1–3. [www.grandfarm.at](http://www.grandfarm.at)
- [16]. Hougla, E. J. H., Hinson, C. D. T., Gbankoto, A., & Anani, B. C. (2019). Characteristics of Urban Market Gardening in Porto-Novo , Republic of Benin , West Africa. *International Journal of Agricultural Science*, 4, 66–76.
- [17]. H.Stapleton, D. (1987). *The Transfer of Early Industrial Technologies to America*. Kansas: Allen Press.
- [18]. IM Ojeifor, F. E. (2006). Crop Production Systems of market gardens in Nigeria. *J Food agriculture environment*, 4, 246-250.
- [19]. J.Casimir, M. (2021). *Floating Economies the Cultural Ecology of the Dal Lake In Kashmir India*. Berghahn Books. Retrieved from [www.berghahnbooks.com](http://www.berghahnbooks.com)
- [20]. Kaldjian, P. J. (2004). Istanbul's bostans: A millennium of market gardens. *Geographical Review*, 94(3), 284–304. <https://doi.org/10.1111/j.1931-0846.2004.tb00174.x>
- [21]. Khan, N. (2020, July). TRENDS AND PERSPECTIVES OF SUSTAINABLE POTATO PRODUCTION. *Journal of Global Resources*, 6(2), 29-36. doi:doi.org/10.46587/JGR.2020.v06i02.005
- [22]. Leach, H. (1984). 1000 years of Gardening in New zealand,Auckland.
- [23]. Mariyono, J. (2018). Profitability and Determinants of Smallholder Commercial Vegetable Production. *International Journal of Vegetable Science*, 24(3), 274–288. <https://doi.org/10.1080/19315260.2017.1413698>
- [24]. Marshall, F., & Randhawa, P. (2017). Urban; Food and agriculture (Issue March). [www.iied.org](http://www.iied.org)
- [25]. Martin, J. M. (1985). The social and economic origins of the Vale of Evesham market gardening industry. *Agricultural History Review*, 33(1), 41–50.
- [26]. Mittal, S. (2007). Can Horticulture be a success story of India? *Indian Council for Research on International Economic Relations*.
- [27]. Nengroo, Z. A., Shah, A. H., & Bhat, M. S. (2017). Dynamics of Land Use Change in Rural-Urban Fringe: A Case Study of Srinagar City. *Environmental Science: An Indian Journal*, 13(4), 1–12. <http://www.tsijournals.com/articles/dynamics-of-land-use-change-in-ruralurban-fringe-a-case-study-of-srinagar-city.pdf>
- [28]. News, H. S. (2003). *Orticulturae*. 43(1), 1–40.
- [29]. Nigel Poole, D. B. (n.d.). *Quality Assurance initiatives for peri-urban food production in India*. Kent,UK: Imperial College .
- [30]. P.K.Joshi, A. G. (2003). Agriculture Diversification in South Asia:Patterns,Determinants, and Policy Implications. *Economic and Political Weekly*, 39(24). doi:10.2307/4415148
- [31]. Paper, W., Paper, W., Paper, W., & Delhi, N. (2007). [www.econstor.eu](http://www.econstor.eu).
- [32]. R.Sakiyama. (1991). What is Horticulture. *Chronica Horticultue,International library for Horticultural Science*, 31(2), p. 17.
- [33]. Sahasranaman, M. (2016). Future of urban Agriculture in India. *Institute For Resource analysis and policy*.
- [34]. Science, V. (n.d.). Part-I : Vegetable production Author : 176062.
- [35]. Silva Dias, J. (2011). World Importance, Marketing and Trading of Vegetables. *Acta Horticulturae*, 921, 153–169. <https://doi.org/10.17660/actahortic.2011.921.18>
- [36]. Singh, B. K., Singh, D. K., Yadav, V. P. S., & Lotan, S. (2010). Adoption behaviour of commercial potato growers in district Ghaziabad (Uttar Pradesh). *Indian Research Journal of Extension Education*, 10(3), 5–9.
- [37]. Sugam, B. (2017). Scope, Status and Importance of Fruits and Vegetables Industries in INDIA & Role of Fruits and Vegetables in Indian Economy. April, 13. <https://doi.org/10.13140/RG.2.2.10140.39044>
- [38]. Thick, M. (1998). *The Neat house Gardens:Early Market Gardening Around London Totnes*.
- [39]. W.Ferguson. (1948). *Vegetable Growing*. Ottawa: Farmers Bulletin 154,Department of Agriculture.
- [40]. Wong, S. (2005). *Market Gardening as a Livelihood Strategy*.
- [41]. Zvonkica Stannin. (2004). From Li chun to Yong:A Market Garden on the Loddon. *Journal of Australlian Colonial History*, 6, 15-34.
- [42]. (2020). *Inspirational Ideas*. eip-agri (Agriculture and Innovation).